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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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A NEW YEAR'S MESSAGE

by
W. B. Greeley

One of the field men in the Forest Service sends me this greeting: "May the New Year be as happy for you as it promises to be hard." My New Year's message to my fellow members in the Forest Service is very much the same: May your New Year be as happy as it promises to be filled with hard work and as it offers opportunities for overcoming difficulties.

The Forest Service is going through more than a temporary period of "excursions and alarms." The changes which threaten the National Forests in these days of reorganization represent in no small measure a backlash from the principles in dealing with natural resources which the Forest Service has painstakingly worked out and put into effect during the past sixteen years. Some of our basic aims in the administration of the National Forests are challenged. The Forest Service is undergoing a searching test on what the administration of the National Forests has accomplished and what is the sober judgment of intelligent public opinion on its merits.

Because I believe that the issue involving the Forest Service will be settled in the last analysis by answers to these questions, particularly from people who use and know the National Forests, I am confident of the outcome. I believe that the vision which has guided the Forest Service policies, the practical common sense which has been shown in their application, and the sincerity and conscientiousness which have put their stamp upon National Forest officers will win the verdict from this jury. I do not believe that the people of the United States want to see the administration of the National Forests changed.

I like to compare the Forest Service with the wrestler in one of the Greek legends who was the son of mother Earth and who rose with fresh strength after every fall because of the fresh contact with his mother. Our work has a vital relationship with good old mother Earth; and because of that vital relationship we are bound, if we are true to our trust, to gather fresh strength from every crisis through which we pass. Every year the people of the United States recognize more clearly the fundamental relationship of forestry to their great problem of land productiveness and utility. Every year the country is extending the scope of its forest activities. The Forest Service is an inseparable part of the vital and permanent order of things. Its destiny is predetermined, if it makes good on its trust. The work which we are doing and the ideals which we are carrying out may meet temporary setbacks, but can not permanently be seriously impaired or turned aside. That is why I face the New Year and the future with confidence.

Our case to-day rests upon public confidence in us and in our work. That public confidence is only partly expressed in the ideals and policies which figure in speeches, magazine articles, and press editorials. The best part of it, and in the long run I believe the most telling part of it, is the confidence born from personal contact with members of the Forest Service, from seeing what manner of men and women we are, from knowing first-hand the sincerity and industry which we put into our work, from appreciating how we as individuals carry the responsibility entrusted to us. The men in Supervisors' offices and Ranger districts, by demonstrating to all observers how the Forest Service is managing public resources and what the Forest Service is as a body of Federal workers, can accomplish more in creating and holding

A New Year's Message (Cont.)

public confidence than all of the rest of us combined. And it is because the people of the United States have confidence in us as men and women as well as in our purposes and principles that the Forest Service is going to come right back, stronger than ever.

The opportunities before us to extend and deepen public confidence are just as great as they ever have been. The more completely we can demonstrate that we are just the group of Federal workers to solve the practical problems of forest administration still confronting us, to master the job of forest protection, secure the fairest and sanest use of all National Forest resources in keeping with our ideals of permanence and public benefit, just that much more completely will we be backed by public sentiment in carrying forward the expanding work of the Service. And so my New Year's message is to forget the troubles and worries and carry right on to make 1922 the best year yet in accomplishment. Hold your pride in the good old Service which can look anyone squarely in the eyes and is unafraid of being judged by what it has done. And make it your resolution that the next New Year will justify still greater pride because of its record of achievement.

I wish I could add a special greeting to every one of my fellow members. I wish that I could know you all personally; I wish particularly that I could express to each of you in some individual way how deeply I appreciate the support and backing which I feel behind me throughout the whole organization. Let me put as much as I can in this New Year's message. When men say the Forest Service needs to be changed around, I ask them to show me what kind of a change would give the country a better Forest Service than it now has, better in the type of men and women which it enrolls, better in the zeal and sincerity and loyalty put into their work. And no one has yet answered the question.

Considerations in the Practice of Silviculture

By W. C. Lowdermilk, D-1

The practice of silviculture on the National Forests is, next to fire protection, the most important phase of the practice of forestry. "How to secure a future stand is the most important point to be considered in every proposed sale" (10-S). Such is the interpretation of the Secretary's regulations and instruction to Forest officers.

The practice of silviculture is dual - implying a knowledge of silviculture and an application on the ground of that knowledge. During the past 15 years of timber sale practice and investigations by experiment station and investigative personnel, a considerable store of silvical knowledge has been accumulated. A great part of this knowledge is contained in reports and bulletins and in the minds of Forest officers. In the latter case it is in immediate usable form. But the frequent changes in timber sales personnel has lost to the practice of silviculture much of this information.

The difficulty of disseminating silvicultural knowledge is handicapped by the shortcomings of circular letters and by the difficulties of getting typed sufficient numbers of reports for the field force. The publication of reports is necessarily slow, hence this means of information has proved unsatisfactory.

More particularly, the most effective method is the personal visits to the field operations by investigative men with the object of indicating in the field man's daily work the direct application of silvical knowledge. This applies, for example, in the work of marking and brush disposal. At the same time the investigative man becomes acquainted with the limitations, in application of some results of investigation, imposed by operation methods. With such personal contact the man practicing the woods end of forestry is made to feel that his difficulties and problems are appreciated and understood, and he is much more apt to read a circular letter or a report when it comes to him.

The matter of marking is taken as a specific case. Many excellent marking plans for sale areas have been made. Adherence to them in the field by changing personnel has proved difficult. It is more essential that the timber sale man know the principles of marking his stands of timber; that he be able to solve his own varying problems in marking than that the marking be in a plan to be followed by rote. It is the marking man and not the marking plan that is the goal. And without the emphasis on the development of silviculturists, the woods end of applying silvicultural knowledge is sure to suffer.

Considerations in the Practice of Silviculture (Cont.)

It is important that a man in charge of a timber sale feel that the cutting is done after his own marking, guided by the general principles of standard marking rules for the timber type, and that he take sufficient time to follow the cutting to see that careless sawyers are not destroying the results of his work.

In another way the field man may lose, in a great measure, the possible benefits of his work by being transferred elsewhere before the cutting of an area is finished, and slash has been disposed of. It has often happened that timber sale men do not see the results of their work. If it were possible, the returning of timber sale men to their old sales for such examination might be of decided benefit to them. It is rare to find a man who has marked a stand of timber and has had something to do in the supervision of the sale who is not very much interested in seeing how his ideas worked out.

The most effective way of getting across the results of research used by the writer has been the visits to timber sale areas and working with the timber sale men, helping them mark, and helping them solve the problems of influence of site, interrelation of species and similar problems. The field men want silvical information in this manner apparently without limit. It is emphasizing the practice of silviculture at the woods end of the operation. This method, with joint annual meetings of timber sale and investigative men on sale areas, would undoubtedly get across to the field men much that is locked up in reports.

YULETIDE GREETINGS FROM THE SECRETARY

Dear Colonel Greeley:

Will you please accept for yourself and pass on to the people in the Forest Service my hope that each and every one of them will have a Merry Christmas and a Happy and Prosperous New Year.

And let me take this occasion to make acknowledgment of the fine spirit in which you are all carrying on the work of the Department in these strenuous times. It is a privilege to be permitted to work with you.

Sincerely your friend,

(Signed) Henry C. Wallace.

Forest Service Cooperation Endorsed

by Leon C. Hurtt, D-1

The banquet held at the new Tavern Cafe in Missoula on December 17 marked the passing of one of the most important milestones in the history of the Western Montana Fish and Game Association. It was one of the most representative and democratic meetings held in western Montana for a long time. The Chief Justice and the Associate Justice of the Supreme Court of Montana were present, as well as the Lieutenant Governor, members of the State Fish and Game Commission, business men, lawyers, doctors, professional men, and at least three preachers. Almost every walk of life was represented, including about twenty members of the Forest Service. In all more than 225 sportsmen regaled themselves with trout, baked duck and elk meat, well seasoned with wit and humor.

The presence of numerous judges and others in political life at the banquet was fortunate. No doubt they were able to sense the pulse of public opinion where prominent speakers voiced the sentiment that "bucking the law" - particularly the game law - is no longer considered good form. These people had the opportunity of gauging public sentiment when more than two hundred people turned out to a feed in a relatively small community and apparently endorsed the opinion that "bucking the law" should cease and that game conservation is a live subject.

The work of the new State Fish and Game Commission for the past eight months was reviewed by the State Game Warden and confirmed the prevalent opinion that the sportsmen are now getting a run for their money. The State Game Warden, as well as the Chairman of the Montana Fish and Game Commission, expressed hearty appreciation of the cooperation given by the Forest Service in game work. It looks like full speed ahead for game conservation and propagation in Montana.

How Come?

By P. A. Thompson, D-6

Many moons ago, fully cognizant of my great ignorance regarding "weed feeds" and "browse feeds" and "grass feeds" native to my beloved District, I sat me down and chawed up a couple of expendable pencils the while I scribbled a little plea to the powers that be to put more pictures in their botanies.

My plea was heard; was, by one "Daytonius, Washington," "perused with interest." (See Service Bulletin of August 1, 1921). I had, unwittingly, it seems, taken a swat at the results of the labors of "Daytonius" and his cronies. He, not having a lot of fires to run him ragged about that time, as did some of us poor ignorant Rangers, spent a little time in looking up my record as a plant collector. Finding but a few tagged with my name he proceeds to tell me where to "head in." However, he overlooked one quite important little item, namely, I had been out of the Service for 6 years prior to my appointment some few weeks before my aforementioned plea was written, so that, I believe, there was reasonable excuse for my ignorance regarding the "pertinent ecological and economic data" relative to a good many plants and shrubs to be found in our Forest.

And then, not satisfied with holding my ignorance up in full view for all the Service to see, he goes on to show what a real "Daytonious" can do when he gets moderately "hot up." He not only lambasts me with eight syllabled words till I'm looking as cross-eyed as the Turpin of the films trying to find their meaning in my vest-pocket Webster and locate his quotations in the Bible or the History of Mormonism or wherever it was he got such dope, but he takes it upon himself to call my poor old Dad some names.

I ask you, - is that fair? "Erotematic," he calls my dear old Dad that ain't never harmed nobody!! I can't find what the blamed jawbreaker means, but it sounds lots worse than some cuss words I know that usually lead to personal combat in this tall timber.

I did get some few kernels out of all the chaff (if it was "chaff" - that's rather neat, eh?) and am sending for the bulletins he names, and whenever that BROWSE publication of Daytonius, with its keys, glossary, generic descriptions, etc., comes off the press I'd like to be on the mailing list. A body who can write them there big words like Daytonius sure ought to get out a great book.

Influence of Size of Seed on Vitality of Seed and Growth of Seedlings

By J. V. Hofmann, D-6

It is a well-known fact that a large seed contains more food for the seedling during the first stages of growth, and for this reason the large seeds will almost invariably produce larger seedlings than those grown from small seeds. The question whether this early advantage in growth is of any advantage to the plant is still an open one. The conclusions reached after several years work with Douglas fir, noble fir, and white pine seed at the Wind River Experiment Station indicate that the size of seed is not a factor serious enough to make a selection of any practical value.

More work has been done with the Douglas fir seed than with the other species, and although the influence of the parent tree was found to be a factor after eight years of growth, the size of seed from the individual parent tree showed no relation to the growth of the seedling after three years of growth. The vitality of the large seed is better in the Douglas fir and noble fir, although in the white pine the difference is very small, and the smallest seed in this particular experiment produced a little better germination than the larger seeds. The seed was graded by size only, although the weights checked consistently throughout, which showed that the largest seed was always the heaviest. During the first year of growth there was no noticeable difference in growth of the seedlings produced from the large, medium and small seed of the Douglas fir and noble fir that would show any relation to the size of seed. The white pine, however, was quite consistent in producing seedlings from the large seed that were nearly twice as heavy as those produced from small seed, and the medium seed produced seedlings intermediate between the other two. This difference in growth in the white pine became inconsistent in the third year, and by the end of the seventh year the average seedlings produced from the small seed were .3 inches taller than those produced from the largest seed. There were 200 seedlings of each size of seed planted out for each species. The sites selected were as similar as could be found, and

Influence of Size of Seed on Vitality of Seed and Growth of Seedlings (Cont.)

the final results are based on 100 per cent measurement. Perhaps more from coincidence than any other condition that might explain growth, the seedlings produced from the smallest Douglas fir seed averaged, at the end of the seventh year, 1.6 inches taller than those produced from the largest seed. In the same way, the seedlings from the smallest noble fir seed, at the end of the seventh year of growth, averaged .2 inches taller than the seedlings produced from the large seed.

The results of this investigation taken at some particular point, such as germination of Douglas fir or growth of first or second year old seedlings of white pine, would indicate that the influence of large seed is very striking. However, when the experiment is taken through a longer period of years and the results analyzed, it is evident that the influence of the large seed does not reach beyond the period when the seedling is dependent upon the food stored in the endosperm. After the seedling is well established growth continues as rapidly, or, as shown above, even more rapidly in the seedling produced from small seed as in those produced from the large seed.

The influence of large seeds on the growth of seedlings is well recognized in plant breeding and naturally is an important factor in plants with very short generations in which the little gain at the start of the seedling may be a lasting quality throughout the development of the plant. In forest tree seeds this factor is eliminated and the only gain possible may be in a slightly better chance of establishment. Research has shown that establishment is very often dependent upon the size of the seed of different species. It is possible that this same factor may be of some importance within the same species.

Taking the Joy out of Joy Rides

By Paul D. Kelleter, Washington

Memorandum 357 brings to our attention the Chief Coordinator's letter of November 22, in which he indicates that unauthorized use of motor transportation has been observed in Washington and must be stopped.

No direct evidence is at hand, but observation of the motor traffic in Washington for the past several years leads to the conclusion that there must be considerable of such joy riding. It is assumed that all cars bearing the legend, "This car for official use only," fall into the unauthorized class particularly when observed in the environs of Washington on a Sunday or holiday with a load of children and grown-ups out picnicking or picking flowers.

The Forest Service in Washington escapes from all these insinuations because of the nature of the equipment entrusted to it. One badly asthmatic Ford touring car without working lights constitutes the Forest Service joy car equipment. The joy generally consists in getting out and pushing the car to get it started and the not infrequent joy of deserting the car which has gone dead in its tracks and walking back to the Atlantic Building. It would not be safe to undertake a joy ride in the Forest Service car and get far from home base. The getting back home might be disastrous. We in Washington therefore view with equanimity the purpose of the memo. and with expectancy the effect on joy rides for the others.

WASHINGTON NOTES

Snap Judgment: After nearly 900 years of litigation and disagreements by the courts, the French tribunals have just decided the oldest case on the records by dividing forest lands in the neighborhood of Jura between two contesting communities.

A Gold Prospector, returned from the Yukon, says that the most remarkable thing he noticed was that Indians never kill a tree unless they have to. Even when forced to strip bark off to scrape the inside for food, Indians in the Yukon bind the bark back on the tree with vines.--Clipped.

A. F. Potter arrived in Washington in time to take part in the Forest Service Christmas Tree celebration.

Artificial Forests in Chile: The largest artificial pine forests of Chile are those of a coal mining company near Lota and Coronel in the Province of Concepcion. While this is the largest coal mining company in Chile, its artificial forests are now perhaps as valuable as its mines. Two Spanish engineers who visited these forests were recently quoted in the press as putting their value at 200,000,000 pesos equal to about $21,600,000 U. S. dollars at present rates of exchange. These artificial forests consist of about 40,000,000 trees chiefly of the pinus maritima and pinus insignis or Monterey pine, and of several varieties of eucalyptus. There are also a small number of acacia melanoxylon. This work of reforestation by this coal mining company has all been done within the last thirty years, and for more than ten years the greater part of the prop timber for use in the mines has been obtained from these forests. According to the statement of one of the managers of this coal mining company, the man who has the project for producing turpentine in Chile desires to produce it from the forests of this company.--Clipped.

Bovine Grape Nuts: "One cow out of three or four included in the experiment objected to having a third of her ordinary food replaced by hydrolyzed sawdust and was refusing it. An inspection of several samples of the sawdust showed a number of quite sizable worms. Some people seem to feel that it is a bit hard on cattle to feed them sawdust, but as a matter of fact the stuff when in proper shape does not look at all unlike grape nuts, which have certainly made a big hit as a breakfast food. However, it is no more than fair to the cattle to give them sawdust that does not have too high a percentage of dust and from which the worms have been removed."--From Monthly Report of Forest Products for October, 1921.

FOREST PRODUCTS LABORATORY

In Spite of Language and Distance: A brass plate on a mounted framed display of envelopes taken at random from the laboratory mail carries the inscription heading this paragraph. The exhibit attracts much interest from visitors to the laboratory main building, where it hangs in the hall. The stamps on this collection would make a stamp collector pop-eyed with desire, ranging as they do from near and remote corners of the known world, carrying engravings of everything from elephants to llamas, from river trading boats sailing tropic rivers to ocean-going liners, and the likenesses of every form of ruler extant, president, king, czar, emperor, Arab chieftain, rajah, and more. A partial list of countries represented gives the field man in the Service a better idea of the laboratory contact with the outside world than a ream of description. Among those present are: Dutch East Indies, Hawaiian Isles, Jugoslavia, Ivory Coast-Africa, Kashmir-British India, Federated Malay States, and about fifty others.

This Explains the Women on the Laboratory Staff: It has been suggested that the strong feminine characteristic of curiosity (which has served the men so well?) might be valuably employed by women for research purposes. This is borne out by the newly-issued "Report on Scientific and Industrial Research," which shows that some of the most abstruse subjects are being dealt with by women investigators. One has written on "A Generalized Hypergeometric Function with n Parameters," another on "Diazo-derivatives of 4^1- Amino-1-phenyl-5-methyl-benzothiazole (Dehydrothio-p-toliudine)"; while a married lady treats of "A New Method of Preparing Sections of Hard Vegetable Structures." Perhaps this last may have some bearing on slicing beet root, carrots, onions and cucumber!

The Laboratory Christmas Party: The Service Bulletin, the District 5 Bulletin, the other bulletins from various quarters where are located larger or smaller fragments of the Forest Service family, have recently carried stories of their Christmas tree parties. We had one, too. With a personnel of 225 representing almost as many individual Madison families, a party by the laboratory is naturally some party. The entire third floor of Lathrop Hall, one of the largest of the University of Wisconsin buildings, was turned over to the laboratory party. This gave the party the run of an auditorium with a stage, and a large gymnasium, the former used for the kiddies' entertainment and tree (including the entry of a gentleman named Mr. Claus) and the gym for the dance that followed. Judging from the general effect it's hard to say whether the young or the old kids had the better time.

State and Federal [illegible] tions are now being carried on between the State Highway Departments of the States in this District and the Forest Service to determine a tentative list of road projects which will meet the approval of the States and also the Federal Government. A large amount of political pressure is being brought to bear upon the various State Highway Departments in the selection of their "7% systems" which they have to determine upon under the Highway Act.

Mining Company Admits Timber Trespass: Payment has just been received from the Belmont-Wagner Mining Company of Telluride, Colorado, for timber cut in trespass from an unpatented placer claim held by that company for use on a group of lode claims at some distance. The value of the timber involved was $326.58. This company at first took the position that they were authorized to use this timber as they saw fit, but later conceded that cutting from the unpatented placer could not be undertaken for the use contemplated without authorization, and voluntarily made the settlement.

Grazing Plans All In: All the Annual Grazing Plans are in. Assistant District Forester Hatton is devoting his time at present to reviewing them. The recent authority received from the Forester allowing the District Office to handle these plans direct with the Supervisor, issuing copy to Washington, combined with the fact that few of the Supervisors' recommendations will show any material change in numbers of stock recommended, will make possible direct action on most, if not all, of the cases this year.

Soldiers Hospital Given Cones: Upon learning of the need for some evergreens, cones, etc., to be used as holiday decorations about the Fitzsimons Hospital, the Forest Service arranged to send out a truck yesterday and had a load of these brought in. They were received with a great deal of pleasure by the officials at the hospital.

Deputy Supervisor Fraser of the Pike has been transferred to the Gunnison as Supervisor.

Alfred W. Mengel, ranger on the Shoshone, died on December 21, following an operation for appendicitis.

DISTRICT 3 - SOUTHWESTERN DISTRICT

The Truth, the Whole Truth: The past rainy season was a very wet one, especially in Santa Barbara Canyon. Ranger Pinson, going up the canyon one day, found a band of sheep whose regular range was on the Panchuela district. He inquired why they were down there and herder explained at some length that they had been on their own allotment, but the heavy rains had washed a large piece of country on which they happened to be grazing down onto the Santa Barbara. They had immediately started back, but the next day it stopped raining and the sun came out and the grass grew so rapidly and luxuriantly that the lambs couldn't get through it so they had to wait until they could eat their way back.

What Action Taken? Any Help Needed? In answering these questions, which are the last on the D-3 Individual Fire Report, a Ranger on the Lincoln Forest, in reporting a fire that had been set by a boy while playing with matches, wrote, "Direct action - father using a rod of correction to advantage. No help needed."

Arizona Game Association: Fifty sportsmen of Maricopa county, Arizona, met in Phoenix on December 13 for the purpose of organizing a county game association. A state game association is likewise in process of formation, applications for membership are coming in, and the outlook for game regulation and management in Arizona is promising. An item in the Arizona Gazette credits Forest Officers with substantial help in promoting game conservation ideas and in assisting with the formation of the plan for the organization. An organization in Gila County has also been announced.

Seeding Methods: Fall counts have been made on all of the seedling plots which have been under the observation of the Fort Valley Experiment Station for the last three years. Interesting developments have taken place in the plots comparing methods of cutting. The Scattered Seed Tree method, which heretofore has been at the bottom of the list in numbers, has passed the Group Selection method with respect to both size and number of seedlings per acre. The Shelterwood method still holds the lead in point of numbers, but the seedlings average smaller than on the Scattered Seed Tree and Group Selection methods.

Educational Cooperation: The D. O. is cooperating with the County Agriculturist of Bernalillo County in the evening sessions of the Department's Agricultural Short Course which is going on in Albuquerque. Films and slides illustrating agricultural subjects and Forest Service films are being shown each evening of the course. The District Office furnishes the "movie" machine, operator, and the Forest Service films. The agricultural films were sent from the Department at Washington, while the agricultural slides were contributed by the International Harvester Company. The good attendance and splendid interest make the cooperation worth while and the Service is getting protection and conservation forcibly into the minds of farmer folk.

Ranger Bill Says:

The Forest Examiner's goin' to finish explainin' the Snell and Capper bills when he comes back for 'nother week's visit.

Disarmament made a big for'ard step yesterday when the new For. Asst. left his 45 home.

A Signature Course would be a great thing for a lot of our officers.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

It Begins to Look as if the life of a Forest Officer while in the field during the hunting season, is rather a hazardous one. It has been suggested that they all wear red uniforms and two or three cow bells while in the hills. We were going to suggest that they also sing, but on second thought it was decided that this would be an extra hazard for some, as the singing of some could easily be taken for the howl of a coyote or the squall of a mountain lion. Not that we ever heard a mountain lion squall, but we are sure it could not be a more blood-curdling sound than the singing of some Forest Officers.

The Last Grizzly: The following is what happened to the last grizzly bear on the Weiser Forest. The last grizzly that was ever heard of in these parts was in 1907. At that time there was one that made a practice of killing cattle. This grizzly met up with a Herford bull one eve, and in the morning, when the mists had flown, both bull and bear were found dead on the battle grounds. Since that time no grizzly has ever been seen; this was evidently the last of his kind in these parts.

Who Knows You? Some evening after 4:30, when you are hunting an excuse from going home, just dig out your new Service Directory, and check off all the Forest Service people you have met, and as you meet others throughout the year, check them off, noting additionally the time and place, and within a year let's check up and see who is the best acquainted person in the District. You will be surprised to find how it will improve your memory.--M.S.W.

Kaibab Wanted for Park: From correspondence recently received, it is apparent that the National Park Service is favoring the inclusion of the entire Kaibab National Forest within the Grand Canyon National Park.

It is Reported that the homesteader around the Caribou National Forest, after three years' effort to develop the same, has notified the local Forest Officers that the Forest Service did him an injustice in listing the land on his request. This is a new angle for the homesteader to take.

DISTRICT 5 - CALIFORNIA DISTRICT

The District Forester has entered into an informal cooperative agreement with the California State Automobile Association, whereby both parties will use all available methods of publicity and prosecution to put a stop to the wanton mutilation of direction signs posted by the Association and the Forest Service.

The following extracts from a letter from the Southern California Fair Association shows that our exhibit work is appreciated and that we are apparently "delivering the goods." Lack of sufficient funds for this purpose is a serious handicap and prevents the acceptance of many requests where there would be similar opportunities to educate the public.

"We wish to express to you and your department our appreciation of the exhibit you gave us and the interest which your department is taking in the work of demonstrational education at fairs. I believe there is no one line of publicity effort that reaches so many people directly as these demonstrations at our principal fairs.

"I have heard a great many expressions from our people regarding the splendid conduct of your exhibitors and the courteous manner in which your attendants answered the many questions and requirements of this great crowd of people. They were always on the job and always ready with exact information on any point. Such reports are very gratifying to the fair association, and the department deserves commendation for securing such officers and attendants."

A great deal of interest has recently been aroused in California by the reported discovery of a small grove of California redwood in the Sierra region. A timber cruiser for a large lumber company came across the trees in Plumas County which apparently had never been seen before because of their inaccessibility.

To verify the report, a party was made up which, in spite of inclement weather and the location of the trees, finally found them. The grove is about 20 acres in extent on a delta formed by the outwash of two streams in a very narrow and precipitous canyon. The trees are rather small, being not more than 40 feet in height and from 12 to 18 inches in diameter. As examples of redwood, the grove turned out to be an excellent stand of western yew, and a good story was thereby spoiled.

While on Ranger Mueller's Division recently, we discovered him smoking a pipe with a spark arrester on it. Careful examination showed that it complied with the State law for spark arresters on logging engines. This pipe was presented to Mueller by one of the permittees who was worried by the recent publicity concerning the Forester's request.

Bouquets Always Welcome: The following letter was recently received from the Yosemite Lumber Company: "Replying to your favor of the 19th inst., we are pleased to enclose check for $301.05 to cover our proportion of fire cooperation for 1921, as per your favor of June 16. We congratulate you sincerely upon the able and successful manner in which you have handled the question of forest fires in the Sierra Nevada Mountains this season."

DISTRICT 6 - NORTH PACIFIC DISTRICT

Many Tourists: According to Olympic records and estimates, 4,260 automobiles visited the forest camps within that Forest during the past summer. Figuring an average of three persons per car, there were something like 12,780 visitors. Forest officers figure that with transients passing through, fishermen, and unregistered visitors, probably a total of 23,000 people visited the Forest during the summer.

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In the 1921 Ranger Examination

Q. What is corduroy as applied to trail construction?

A. Corduroy is a kind of rough pants that a Forest Service man wears when making trails.

He Said It: An Irishman (from the "Ould Sod"), desiring a grazing permit, called at the Fremont Supervisor's office, and upon being told that in order to qualify as a Class A permittee he must own less than the protective number of sheep and commensurate ranch property upon which he raised sufficient feed to winter his stock, replied: "Be Gory! Ye mustn't be too dom rich nor too dom poor to get a permit on the Forest."

Getting Together: The members of the Colville feel that the meeting of the joint forces of the Chelan and Colville Forests was a decided success and that they have profited thereby, in spite of the fact that snow and zero weather made auto traveling on the long return trip to their respective stations a cold proposition. It is hoped that meetings of this kind can be made an annual occurrence.

The Summer Home Permittees of the Lake O' the Woods summer resort on the Crater are contemplating holding a meeting early this winter for the purpose of organizing an association. There were eight new summer residences erected at the Lake this summer.

Blister Rust in Our Midst: Word was received in Portland this fall that blister rust had been discovered by British Columbian pathologists on Vancouver Island. Later discoveries were made in northern Washington. This is the first time that this dread fungus has crossed the Great Plains, though it has wrought widespread damage on white pine throughout the northeastern States. A special conference was held in Portland on December 19-20, at which there was a large attendance of those interested in the western white pines. There was a good representation of lumbermen, State foresters, forest schools, Federal and State pathologists, Federal and State foresters, from both the United States and British Columbia. A definite plan of campaign was organized. So far the fungus is largely confined to black currant bushes.

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Some Bird

Teacher: "Johnny, what domestic bird can not fly, has to scratch for his food, and is the first one you hear in the morning?"

Forest Ranger's son: "My dad, Ma'am."--Clipped.

FOREST SERVICE
U.S.
DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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IS IT TRUE?

(The following article was published by the Efficiency Magazine of London. Is it true? Is any part of it true? If there is any color of truth in any part of it, what are we going to do about it?--R.H.)

Speaking quietly, without rage and prejudice, can anyone tell why it is that all government departments in all countries are slow, wasteful and incompetent?

There must be some basic reason for this, as the individuals in these departments can not all be inferior to the individuals in private firms.

Almost invariably an able man becomes disabled when he is placed in a government department.

He becomes timid, procrastinating, noncommittal, evasive and unprofitable. He becomes a mere chattel of routine.

Why is this?

The fact seems to be that man simply can not be competent in a government job for the following reasons:

(1) There is no payment by results.

There is no piecework. There is no profit-sharing. A man gets as much for doing badly as he does for doing well.

(2) There is no fear of discharge.

A man may be transferred, but as long as his conduct is satisfactory, he can not be discharged for incompetence. Any sort of a fool can hold a job forever in the civil service.

(3) There are no profits to be made.

There is no possibility of bankruptcy. If the department doesn't pay - very well. The treasury has plenty.

(4) There is no danger of losing customers.

A government department does not depend upon its customers, so that it has no incentive to be quick and courteous and obliging.

(5) The main thing is accuracy, not success.

A government employee has simply nothing to do with success. His aim is to avoid mistakes. The less he does - the fewer mistakes.

(6) Time is of no consequence.

As all government employees are made into clerks, they come to have a clerk's disregard of time. To clerks, as to lawyers, a delay is a relief and a comfort - the more the better.

(7) The work is impersonal.

There is very little personal responsibility in a government office. The clerks have arranged a system whereby nobody is to blame, no matter what happens.

(8) There is no competition.

A government department is always a monopoly. If it were not, it would soon be thrown aside. It has no competitors to battle with, and it can take its ease and do as it pleases.

(9) Routine is put ahead of service.

In government departments all the workers (if I may use the word) are tied with red tape. They are all the slaves of a system of procedure.

Is It True? (Cont.)

(10) There is no enthusiasm.

If a man stays in a government job long enough he becomes mummified. He loses all the energy and joy of living that are so necessary to efficiency and success.

These are a few of the reasons why nationalization always has failed and always will.

Just put yourself in the place of these poor government automats. No matter how able you are, how could you be efficient if you had:

No hope of profits; no fear of failure; no competitors; no customers; no reason of hurry; and no danger of being gound out.

Nationalization is not only a destroyer of trade and commerce. It is not only a coral reef built across the harbor of prosperity.

It is worse. It is far worse. It is a destroyer of men. It takes an able man and grinds him down until he is a clerical drudge.

It lowers the spirit and hardihood of a nation. It pauperizes. It dulls the mind and benumbs the feelings. It changes lions into rabbits. What could be worse?

National Forests Road Fund Apportioned

By F. E. Bonner, Washington

The Secretary has just approved the definite apportionment of the $15,000,000 appropriation for National Forest roads and trails made by the Act of November 9, 1921. The appropriation is separated into two parts, each for a distinct purpose. There is set aside $9,500,000 designated the Forest Highway fund, which must be used on "forest roads of primary importance to the State, counties or communities within, adjoining or adjacent to the National Forests." The balance of $5,500,000, called the Forest Development Fund, is segregated for roads primarily beneficial in the utilization and development of the Forests themselves.

The Act stipulates certain factors to control the distribution between States, and after thoughtful consideration and calculation by the Forest Service during the past two months as to the application of these factors the following apportionment has been worked out and approved by the Secretary:

State	Forest Highway Fund $9,500,000	Forest Development Funds $5,500,000	Total
Alabama	$4,880	$5,799	$10,679
Alaska	970,271	50,222	1,020,493
Arizona	598,189	280,722	878,911
Arkansas	70,365	72,573	142,938
California	1,460,871	703,822	2,164,693
Colorado	717,058	336,360	1,053,418
Florida	25,118	8,730	33,848
Georgia	13,355	20,347	33,702
Idaho	1,097,894	1,088,656	2,186,550
Maine	2,760	4,754	7,514
Michigan	3,638	6,220	9,858
Minnesota	60,929	65,621	126,550
Montana	878,886	574,615	1,453,501
Nebraska	11,065	11,159	22,224
Nevada	207,984	55,377	263,361
New Hampshire	35,294	24,276	59,570
New Mexico	458,258	219,652	677,910
North Carolina	27,856	46,984	74,840
Oklahoma	5,645	8,764	14,409
Oregon	1,157,109	718,555	1,875,664
Porto Rico	1,454	5,344	6,798
South Carolina	1,572	8,704	10,276
South Dakota	77,553	64,139	141,692
Tennessee	20,896	23,243	44,139
Utah	371,776	164,258	536,034
Virginia	26,140	46,512	72,652
Washington	708,133	602,889	1,311,022
West Virginia	6,051	14,602	20,653
Wyoming	479,000	267,101	746,101
	$9,500,000	$5,500,000.	$15,000,000

National Forests Road Fund Apportioned (Cont.)

The Forest Highway fund was divided on the basis of 50 per cent in proportion to Forest area, and 50 per cent on the basis of the Government land value. The factors determining the apportionment of the Forest Development Fund included the amount of improvement needed, the comparative difficulties of construction, forest value and fire hazard.

Law Enforcement

(Supervisor MacDaniels talks to his Rangers on the Siskiyou, D-6)

Law enforcement is going to result in a cut-off that will eliminate a lot of bad grades, roundabout travel and costly maintenance in our job. Much of the time we build trails, deal out grazing, free use and telephone permits, and are looked upon as a sort of deputy Santa Claus. All of which is fine in its place and brings us great influence and popularity with the neighbors. But that isn't all of it by a whole lot.

There are times when we must be the hard-boiled representatives of an injured Government, or lose our self respect, as well as that of the oppressed neighbors. We have laws with plenty of teeth in them, the backing of the whole U. S. Government, including the army if we need it, and public opinion on our side. There is a surprising number of people who are ready to give three cheers for anyone who will go out and get a conviction. Fighting fires is heroic and showy - also expensive, as the taxpayer realizes. If we want to really become the public's pet and pride, the way to do it is to secure fifteen or twenty convictions for leaving camp fires, that will enrich the county's road and school fund; and maybe a good, stiff sentence in a Federal court for some incendiary. If we want grown men to give us the right of way on the sidewalk and small boys to name their dogs after us, we have only to get a reputation for being public officers who tend to business and don't allow any foolishness with matches by anyone.

This means that we will have to show more than a passing curiosity about the cause of fires - that we will have to find out everyone who could have been near that fire when it started and hunt them up and begin asking pointed questions. If they were there, they are under suspicion. No matter who they may be, we can't pass up a chance to get a conviction merely to be polite. What we want is the facts, and it may take quite a lot of work to get at them. Even if the other party does get a little ruffled, he will realize that whoever left that fire did something that he shouldn't and that we mean to find out who did it. He may not like the nature of our job, but he will have to admit that we are attending to it as if we meant it. Good nature is a grand thing, and an accommodating disposition is indispensable on our job nine-tenths of the time. That is one time when we must insist upon being shown; when we are justified in being a little doubtful about anyone's complete innocence; if they had a motive or an opportunity to set it out.

No use in making a lot of loose charges or threats, or acting mysterious, or being bullies, of course. No use, either, in being a lot of affable saps who let folks burn up the woods under our feet. It's just a matter of business - of getting all the facts in the case and acting on them. Last year we got a conviction for every eight fires or thereabouts. This year it's about one to fifteen so far. I believe that when we get to putting in our best licks on this sort of work, we can average one conviction to every five fires pretty consistently. Believe me, when we get to that point it will take a lot of the fun out of dropping matches carelessly.

Ranger Bill Says:

'Tain't a bad idea to include Yourself in the annual property inventory.

I'm thinkin' of framin' the letter of appreciation for good work the Boss sent me t'other day.

Speakin' of a needle's eye, did you ever try to get back into the Service, said former Super. Quitem.

An inventory of [illegible] of October 1, 1921, was made upon request of the Bureau of Efficiency. The following tabulation of some of the data suggests several questions which will likely be asked at [illegible] allotment conferences.

District	Fire-Fighting Equipment	Livestock and Equipment	Mechanical, Technical, and Scientific Apparatus	Furniture and Office Equipment
1	$156,449	$44,653	$31,586	$59,928
2	178,207	9,321	31,030	104,261
3	14,525	9,328	9,144	46,169
4	77,149	3,000	20,532	65,224
5	91,984	8,425	51,150	103,335
6	120,670	24,377	52,461	88,873
7	7,992	2,752	20,947	95,204
8	160		11,700	6,420

The tables following show GENF money allotted by the Districts for Supplies and Equipment during the past four years. These figures also point several questions.

Protection

Year	D-1	D-2	D-3	D-4	D-5	D-6	D-7
1919	$4713	$3680	$2553	$1759	$1117	$3076	$931
1920	5777	2917	1485	1384	2307	2230	812
1921	5964	1534	690	975	1085	2740	194
1922	10613	1802	1375	688	930	3525	849

Utilization

Year	D-1	D-2	D-3	D-4	D-5	D-6	D-7
1919	$6920	$7427	$3187	$3273	$3161	$4400	$ 778
1920	6678	4997	3614	2925	2431	3140	933
1921	8205	5074	1510	4384	1935	3185	301
1922	7661	6739	2390	4992	2781	2265	747

--Operation.

WASHINGTON NOTES

Forest Inspector Paul D. Kelleter, resplendent in the new uniform, sans insignia and service stripes, left Washington on January 7 for a swing around the "Big Circle," with Ogden, Utah, as his first objective. Mr. Kelleter will be the center of attraction for the next six weeks at all Supervisors' conferences. It is expected that hereafter all Washington officers will appear in the field in full uniform.

New Head in Bulletin: Elsewhere in this issue will be found a new main head FOREST EXPERIMENT STATIONS. This is in keeping with the policy to enlarge the scope of the Bulletin from time to time in order to cover all major phases of our work. Forest Experiment Station men are invited to contribute short, pithy news items in connection with their work for this column.--Editor.

Organizing the Fight Against Teredo: The highly destructive appetite of the marine wood borers - especially Teredo - has been mentioned from time to time in the Service Bulletin. In Seattle and San Francisco studies have already been undertaken to determine the extent of and means of combating the destruction caused by these insects.

Meanwhile the National Research Council took hold of this subject and appointed a committee to take the preliminary steps toward a national survey of the wood borers. The Council invited the Forest Service to join the Committee, and the Service is represented by Mr. Hunt of the Forest Products Laboratory, with Mr. Betts as an alternate.

It is expected that a fund will be raised and extensive work undertaken in the biology, chemistry, and engineering of the subject, including a study of the life histories of the borers and physical and chemical means of protecting piling.

The subject is one of great importance, because marine borers cause a vast money loss, as well as endanger human life by making wharves unsafe.

This is only another of the many instances of how the waste of wood bears directly on our forest policy.--Ward Shepard.

Aerial Photography may yet come into use in connection with National Forest map-making work. The photographic section of the Army aeronautic plant at Bolling Field, near Washington, recently made a composite picture of 150 square miles of land in nine days. An interesting feature of the work was th fact that the pictures were made by photographers flying at a speed of 125 to 150 miles an hour.

Bonus Will Continue: Chairman Madden of the Appropriations Committee states that Congress intends to continue the present $240 bonus to Federal employees until pending reclassification legislation finally is effective. "Members of Congress," he states, "are in sympathy with the difficulties of the Government employees in meeting expenses. We realize that many are getting much smaller pay than they ought to receive."

Staebner Resigns: On December 31 the Service lost an able member through the resignation of Ralph C. Staebner, Assistant Chief of the Eastern Division, Branch of Forest Management, to become Woods Superintendent of the Meadow River Lumber Company, Rainelle, W. Va. Staebner graduated from the Harvard Forest School and entered the acquisition division of the Forest Service in 1912, leaving in 1913 to accept a position with the Little River Lumber Company, Townsend, Tenn. He was one of the group of American foresters sent to France in advance of the 10th Engineers as assistant to Majors Graves and Greeley, where he rendered valuable services in the work of producing timber supplies for our army, which led to his promotion to a Captaincy. Upon returning to the United States, Staebner rejoined the Little River Company, in charge of the woods operations. His demonstrated ability attracted the attention of the Forest Service, and he was induced to re-enter the Service in November 1920. An attractive personality and a fine consideration for his associates won him a host of friends in our ranks, who regret to see him leave, but nevertheless wish him Godspeed.

FOREST PRODUCTS LABORATORY

All Aboard! "Come this way," said the genial engineer in charge of the Box Laboratory, "and I'll show you the machine that does the shimmy." We went up into the room where the box specialists test the good and bad points of boxes and crates and there, between the big and little tumbling drums, was the latest testing machine installed by the Laboratory. This machine is a low, steel-topped table affair on wheels, motor driven and geared to eccentrics i such a way that, when started, the exact motion of a freight train, en route, is imparted to any box placed on the table top. Several varieties of freight train speeds can be thrown into gear and a couple of spring bumpers to be later placed on the apparatus will give the box riding this machine all the thrills it would get during the starting and stopping of a train.

"You'd be surprised to see how soon the nails begin to loosen in a box under this treatment, mild as it looks; they walk right out in a surprisingly short time," the engineer explained.

"And as for fiber boxes filled with canned goods - we expect to learn many interesting things about their behavior under shipping conditions exclusive of tumbling tests in the drums. We have several projects that have been awaiting the installation of this device. As far as we know, it's the only one of its kind in existence. We designed it and had it built to order. Some machine, is it not?"

The steel table did an extra wobble or two and came to a rest.

"Guess this is where we get off," said one of the visitors. "I feel as if I'd been on it after watching the distress of that box. Some machine!" --E.P.A.

FOREST EXPERIMENT STATIONS

Southern Pine Stands Make Rapid Growth: Although the Southern Forest Experiment Station was established only last July, yet the need for research work in forestry was recognized by Mr. Henry E. Hardtner, President of the Urania Lumber Company, six years ago, when, through his cooperation, some experiments in the effect of thinning young timber were established by the Forest Service and the Louisiana Conservation Department on the company's land at Urania, La.

These plots were remeasured in 1920 and the results show the rapid development of old-field and second-growth pine in the South. Heavy and light thinnings were made in a four-to-ten-year-old stand of old-field loblolly. The heavy thinning resulted in a slight increase in size over the check plot, while the trees in the lightly thinned stand avaregad four feet taller and .8 inch larger in diameter than the trees on the check plot in 1920. In an eleven-year-old stand of shortleaf, the trees in the thinned plot grew half again as fast as in the check area in both diameter and height, while they increased in volume at the rate of 3.4 cords per acre per year as against 2.9 cords on the check.

The effect of good soil on rate of growth was shown in the so-called Castor plots in old-field loblolly where, at 25 years, the current rate of growth per acre per year was 3.9 cords for the heavily thinned stand and 3.3 cords for the lightly thinned. On the other hand, the so-called Mayes plots in shortleaf and loblolly, of the same age as the Castor plots, showed a much smaller increase, partly because of the poorer soil and partly because of the greater proportion of shortleaf pine, which naturally grows more slowly than loblolly. When stands of young pines will make three to four cords of wood to the acre every year, there is hope for forestry in the South.--Lenthall Wyman.

THE RANGER'S LAMENT

(Tune - "Christopher Columbo")

The standard of Efficiency turned in his standard chair,
And called to his stenographer, and standard was her hair;
"Please write the Average Ranger, and say that he must go
And leave his wife and Standard kids and wander to and fro."

(Chorus) For the average Ranger must-O,
Do time from home or dust-O,
Scientific locomotion,
Standardizing every notion,
Forty days or bust-O.

The Ranger found the standard time and started like a gale,
For forty days and forty nights he hit the mountain trail,
Imagine now his deep chagrin when he returned to know,
That all this time he'd traveled "to" when he should have traveled "fro."--D-6.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

District Investigative Committee Meets: A meeting of the District Investigative Committee was held on December 23 and 24. Investigative work of the year was gone over and plans were made for the coming season. Although no research money has been available for investigations in D-2, except for the studies conducted at the Fremont Experiment Station and the Wagon Wheel Gap Cooperative Station, there are quite a number of live projects on various Forests from which considerable data of value is being gained. In addition to the reforestation projects, some of which have been in progress for 10 years, the most important studies contemplated for next season are: (1) the proper method of handling Engelmann spruce stands, (2) thinning in Douglas fir sapling stands for Christmas trees, (3) the study determining the practicability of planting in the pinon-juniper type in the Arkansas River valley.

Michigan Land Exchange Approved: Word has been received of the approval of Lists 2, 3 and 4 of the Michigan Land Exchange involving about 42,000 acres. This action paves the way to a continuance of planting operations which would otherwise have had to be moved next year to another part of the Forest.

Big Timber Sale Likely on Medicine Bow: Application has recently been received for approximately 25 million feet of timber within the Lake Creek unit, near Fox Park, on the Medicine Bow Forest. It is estimated that the following products may be secured from this area:

444,000	hewed railroad ties
4,360,000	ft. b.m. sawlogs
7,500,000	linear feet prop material

The applicant is the Otto Lumber Company of Laramie, Wyoming, of which Otto Gramm is President, with whom Mr. M. J. Sweeney, for several years Forest Examiner in the Forest Service, is associated.

Fiscal Agent Q. R. Craft underwent an operation for appendicitis on Monday, January 2, and is now on the rapid road to recovery.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Mother Nature and D-3 Get a Pretty Compliment: An Arizona correspondent writes: "All the forests here are the work of nature, which is well performed if only preserved."

Sizer Now the Apache Supervisor: Mr. J. H. Sizer assumed the active duties of his new position as Supervisor of the Apache on December 22. The resignation of Mr. Selkirk will be effective December 31, and the wishes of the entire District go to Mr. Selkirk that he may be successful in his business.

Pinon Nut Industry: That the pinon nut industry is assuming an important place in the economic life of the State is shown by the following approximate estimates of the amount of pinon nuts gathered this year in the three large producing regions of New Mexico. In the Carson country 276,000 pounds, around Santa Fe 400,000 pounds, and down on the Datil 500,000 pounds, a total of 1,176,000 pounds. Pinon nuts are retailing on the local market at 20¢ per pound. The crop from the above regions represents a retail value of but a little less than one-fourth million dollars.

The Value of Experimentation: Recently a member of the Rotary Club of Flagstaff, Arizona, brought before that organization the subject of forestry experimentation with special respect to its effect upon the economic conditions of the local industrial community. The interest manifested caused the Club to request Mr. Pearson of the Fort Valley Experiment Station to address its members during the next meeting and to tell them about the methods and results of such experimental work. Recognizing the value and need for such activity, the Club passed resolutions asking the Arizona delegation to urge upon Congress the enlargement of the support rendered forestry experiments.

Indian Reaction: The Forest Service films were shown recently at the Government Indian School near Albuquerque. In the reel on "Grazing on National Forests" there is a section that pictures a cattle round-up on the Coconino. A cowpuncher undertakes to throw a yearling by the head. There was breathless interest while the struggle was going on, but when the calf went down, the Indian boys fairly raised the roof with shouts and hand-clapping. Then as the cowboy is getting off, the calf by a sudden jump gets to his feet and away he goes dragging the man, whose arms are about his neck, between his legs. The boys were silent for a moment, then let go a wave of Indian disgust accompanied by hisses from various places in the auditorium. Finally, however, the man gets the upper hand again and flounders the yearling a second time. Without hesitation he was awarded once more the unstinted approval of the entire 500 redskinned youths. None of the other films aroused very much strong feeling among these original Americans.

To Sell Utah Scener [illegible] d a meeting last Monday and Tuesday in Salt Lake City, at which was gathered representatives from southern Utah, the railroads, and National Park Service. A definite movement was launched to develop and sell Utah scenery. The National Park idea was pretty strong, and the Utah people seemed to stand very determinedly for utilization of the State's scenic attractions. There was also some discussion of a State Park.

Wind Shield Stickers: In filling our order for 100,000 wind shield fire stickers, the Government Printing Office printed about 16,000 extras on which the space ordinarily occupied by a certain Forest was left blank. The surplus stickers were offered to the Utah and Idaho State Automobile Associations with the idea that they might print their insignia in this blank space and distribute the stickers as a part of their tourist service. The Idaho Association has accepted our offer, and about 8,000 of the stickers are being sent to Secretary Niemeyer at Nampa.

Petition Received: A petition was received, signed by 114 residents of Huntington, Utah, requesting the construction of the Huntington Canyon Road on the Manti Forest. They propose donating $20,000 in labor on the basis of an estimated cost of $60,000. The purpose of the road is to tap a very large body of merchantable timber and to make accessible coal mines in Huntington Canyon. From a recreational point of view the value of the road is large.

Game Protection: An interesting instance of game protection occurred about September 1 of the past season on the Payette Forest, when Emmett Woody, fire guard stationed at Whites Creek on the Middle Fork of the Salmon River, drove off two enormous eagles from their attack on a yearling deer. The deer acknowledged the moral support given by Woody, who was unarmed at the time, by trying to crawl under the horse he was riding, and continued to follow toward the station for some distance.--Payette.

Large Number of Trout Eggs Obtained: The Utah State Game Department and the Bureau of Fisheries obtained 6,000,000 eastern brook trout eggs this fall from Fish Lake on the Fishlake Forest. This is double the amount taken any other season, and eggs were still available when the work closed. The increase in the amount of spawn of the eastern brook trout obtainable is credited by the Bureau of Fisheries to the consistent planting of three-and four-inch fish which has been done by the Bureau since 1917, the total number planted by them being 141,000. Last spring nearly 10,000,000 eggs of rainbow trout were obtained from Fish Lake, making a total of at least 15,000,000 eggs taken during 1921.

DISTRICT 5 - CALIFORNIA DISTRICT

Xmas Party for the F. S. Kiddies: On Saturday, December 24, a Xmas party was given for the Forest Service kiddies. Ed Kotok was Santa Claus and he surely was a dandy. The tree, which came from the Eldorado, was a very symmetrical one and Mr. Fair decorated it, which is 'nuff said. There were presents for all the children and for a number of the grown-ups. After the visit of Santa, refreshments were served. Last, but not least, the Sierra sent a large box of mistletoe, a sprig of which was given to every lady at the party, and the Stanislaus contributed a box of very fine red apples, whose color added greatly to the effectiveness of the luncheon tables, and, needless to say, they were much enjoyed. About two hundred people were at the party and from the comments heard we would say that every one had a very fine time.

Passing the Buck and the Alibi Habit: Passing the buck is a popular sport all over the world in all lines of business. It requires no talent, training or effort. It is the easiest way known to dodge responsibility. After being practiced for some time there develops the alibi habit. This takes some study and practice in order to always get away with it. Last spring an inspector was on a trip and noticed some Government property lying outside the storehouse in the weather. The Inspector asked the Forest Officer why this property was outside exposed to the weather, and the Forest Officer replied that his predecessor had left them there. This was a combination of buck passing and alibi all in one. If the passing of the buck and the alibi habit continues long enough it becomes chronic and produces that incurable habit, irresponsibility, for which no remedy as yet has been found.--Sloan, Santa Barbara.

DISTRICT 5 (Cont.)

Airplanes in Forest Protection: An article on the use of the airplane in Forest protection, written by District Forester Redington, appeared in the January number of the "Citrograph," a monthly publication of large circulation devoted to the interests of the citrus industry and to the promotion of subtropical agriculture.

The Demand for Our Exhibit Material: We have found out that it is absolutely no trouble whatever to keep good exhibit material in almost constant use. As an illustration, the use of our new exhibit since September first may be mentioned. This has been set up at the Sacramento State Fair, Fresno District Fair, Southern California Fair at Riverside, Traffic Officers' Convention in Oakland, Fire Conference at Mather Field, and is now installed in the display rooms of a big automobile dealer on Van Ness Avenue. It is spoken for by one prominent automobile dealer each in Oakland, Berkeley and Stockton. In every case except Mather Field, we were requested to set up the exhibit, and all expenses of installation will be paid by outside parties, except at the 3 fairs and at Mather Field. In the past 4 months it is estimated that 250,000 people have seen this one exhibit.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Starting the New Year Right: The National Forests and forestry received space totaling 150 inches of reading matter in the New Year's edition of the Portland Morning Oregonian. In addition, there were some four pages of cuts accompanying the write-ups. The main subjects treated were Oregon's timber resources, forest protection, reforestation, forest recreation, and a special Oregon Caves story. The material used in the write-ups as well as most of the photos was furnished by District Officers.

Voila, Notre Colonel!! The September number of the French forestry journal, Revue des Eaux et Forets, carries an 11-page review of S. T. Dana's Bulletin 638, "Forestry & Community Development." The review is written by the well-known French forester, M. Alphonse Mathey. The concluding paragraph of the review is translated as follows:

> "These ideas of wisdom put forth by Mr. Dana will surely find a warm welcome from the new Director General of American forests, Colonel Greeley. He is the right man in the right place. Every French forester who had the opportunity of appreciating Colonel Greeley's high qualities of heart and of spirit have applauded the choice of this forester to direct the destinies of the forests of his country."

Land Exchange: On November 4, the President signed proclamations making the following eliminations: From Colville Forest, 8,410.23 acres; from Columbia Forest, 20,301.56 acres. These eliminations are made for the purpose of permitting the State of Washington to make selections of the vacant lands involved as a part of the exchange whereby the State relinquishes its right to Sections 16 and 36, unsurveyed at the date of the Forest withdrawal, within the National Forests.--C.J.B.

"Bob" Goes: Robert H. Weidman of the District Office, who was appointed Director of the Priest River Experiment Station in District 1 on July 1, but who remained in this District during the past field season, left Portland on November 22 to take up his new work at Missoula. Mr. Weidman has been with D-6 during the past six years engaged chiefly in silvical research, and during this time he has qualified as an expert on the silviculture of western yellow pine.

DISTRICT 7 - EA

The Cherokee National Forest, within the last six weeks, issued 25 prospecting permits for approximately one-hundred acres each at $5.00 a permit.

A sale was also recently made for fifty cords of dogwood at seventy-five cents per cord, for use in the manufacture of shuttles.--S.H.T.

Forest Supervisor L. L. Bishop, who is in charge of the work on the Allegheny Purchase Unit, has been joined at Warren, Pa., by his family. The family had the experience of arriving from their erstwhile home in Florida at their new home in Pennsylvania in the midst of a very pretty snowstorm.

Waking Them Up: During the thirty days following the announcement of the establishing of the Allegheny Purchase Area the project was given approximately 120 column inches of publicity in the Warren daily papers. Of this total 60 inches appeared on front pages. One headline extended the full width of a front page. The daily papers of Philadelphia, Buffalo, and Pittsburgh and other cities carried during the same period press dispatches totaling a much larger space.

Logging Engineer E. V. Clark has left District 7 to join the Timber Section of the Income Tax Unit of the Internal Revenue Bureau as valuation engineer. Mr. Clark has been a member of the Service since 1909 when he was appointed assistant Forest Ranger on the Plumas National Forest; he was afterwards Supervisor of the Georgia Purchase Area, going from there to the supervisorship of the Ozark National Forest. He was appointed logging engineer in District 7 shortly after his return from the Army in 1919. His broad and varied experience in the field work of the Service was of great value to the District Office and Clark leaves a vacancy which will be hard to fill.

DISTRICT 8 - ALASKA DISTRICT

Supervisor Chas. T. Gardner of the Tongass Forest is spending ten days in Portland conferring on pulp sale, water power and road matters. He reports everything lovely on the Tongass and the Forest Service steadily gaining friends in Alaska.

Birds & Birds: I noticed a while back, either in the Bulletin or the 6-26, where a Forest officer mentioned that he counted in the neighborhood of 35 eagles in his district in one day. This brings to my mind an incident that occurred several years ago in Ketchikan. A tourist met one of the residents and asked if he could secure a fish trap to take back to the States to show his friends. So the resident took the tourist down on the flats and showed him a trap he could get for about $7000. It contained about 125 M bd. ft. of spruce logs, 2500 ft. of galvanized cable binding the logs, and about 20 tons of concrete anchors to hold the trap in place when fishing. You might say that the story of the eagles has no connection with the fish trap story. But it has. Both show that the people in the States have no idea of the enormity of things here. Now the tourists, who had no doubt been trapping moles or mice, thought this fish trap was a whopper; but it was only an average one, and so, the fellow who counted the eagles thought he saw "some eagles" but - while at the Karta River Gage I counted 34 eagles in one snag and while at Short Bay I saw at least a hundred on the beach at one time. In fact, we would be willing to back our "eagle count" here against some of your "sheep counts" down there.--J.M.W., Tongass.

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And Right in Our Own Department, Too!

Dept. Press Service: "Please send us a photograph of a leading Forest Service activity."

Forest Service: "Have you anything special in mind?"

D. P. S.: "Yes, tree surgery will do."

Service Bulletin

U.S. FOREST SERVICE
(Contents Confidential)

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SERVICE-MADE STANDARDS AND MAN-MADE INITIATIVE

(Adapted from some remarks at the Mather Field Fire Conference)
by
Col. W. B. Greeley

A motto which has long hung upon the walls of the Forest Service in Washington tells us that science is nothing but organized common sense. Forest fire control, whether we call it a science or an art, is simply the common sense and experience of hundreds of men organized into a system. We can not overlook the word "organized" in these definitions. That is what welds individual enthusiasm and initiative into an effective machine. We can no more develop effective protection of the National Forests without training, organization, and system than we could make a real army overnight out of a million patriotic citizens who might volunteer at the first call.

The Forester and his cohorts have had a good deal to say of late about standards and plans in the work of the Service, particularly in fire control. Some of these ideas have perturbed men in the field. A group of Supervisors adopted resolutions condemning the introduction of military methods in the Forest Service. "Mutterings" have appeared in the columns of the Bulletin. The Forester, it is said, demands that no chances be taken, when any Supervisor knows that he can not get his work done without taking chances. The fear has been expressed that cut-and-dried rules are to take the place of head work, energy, and a sense of responsibility in the men on the ground; that before a Ranger or Supervisor can act in an emergency he will have to read up on the next steps prescribed in some printed manual. Some men in the Service seem to feel that there is an inherent antagonism between system and personal initiative.

The greatest speech made by Daniel Webster was in reply to a group of men whose philosophy asserted that the Federal Union violated liberty, and that as between these antagonistic principles, the Union must be sacrificed. Webster's answer was "Liberty and Union, one and inseparable." It is my conviction that in our efforts for a more efficient Forest Service system does not clash with initiative. It is rather system and initiative, each strengthening and supporting the other.

The main dependence of the Forest Service will always be the loyalty, initiative, and sense of responsibility of its members. Nothing will ever replace them. But we must build a system which will give these essential qualities in the men of the Service the best tools to work with, the best support and team work at every point, the best chance to make good because foreseeable handicaps and sources of weakness have been eliminated. As far as we can, we must do away with the waste of labor and money in the fire game because some part of the machine is out of gear. We must do away with the disheartening of Forest officers who see good planning and head work come to nothing because things do not fall out right, as far as those things are within our control. We must do away with the making of the same mistake over and over again, with the leaving of green men to learn the game by themselves and find out from costly experience what seasoned men already know. In accomplishing even this much, there is need for a deal of planning, of training, and of system, not to suppress or tie down the individual Forest officer but to give him all the better chance to accomplish 100 per cent of the results to which his ability and initiative entitle him.

I know that Supervisors must take chances. I have been a Supervisor myself; and the chances which the Forest Supervisor took in 1906 were 10 to 1 as compared with the chances which Supervisors take now. But there are many chances which we can cut out, like the chance of a broken telephone line, the chance of the empty tool cache, or the chance of the uninstructed guard. You do not take away the initiative of the miner when you give him a compressed air drill to take the place of his old sledge hammer and piece of bar steel. Nor will the Forest Service take the initiative from its field men if it gives them more dependable and more effective tools to work with. We are rather broadening the opportunity for effective use of each man's initiative and giving him a better chance to show what he has in him.

There is nothing military or cut-and-dried in standardizing the methods of the Service in matters wherein our own experience has already weeded out the good from the bad. We are simply organizing the horse sense and experience of the officers who have been through the fire game on the National Forests - all of them. We are trying to utilize effectively what they already know about the job. Nor will standards or systems or work-plans be written in Washington. We are putting it right up to the Rangers on the ground. We are asking them to set down what their own judgment and experience tell them should be done in a regular and systematic way in order to avoid known mistakes and plug up every open hole that can be plugged. Standards and systems that are handed down from the top may be cut-and-dried, but when they grow up from the bottom, out of the first-hand experience of the men on the job, they will have life and usefulness just as long as our organization is composed of wide-awake and useful men.

In other words, without initiative and head-work by the men who create them, systems of any kind readily become lifeless rules or alibis for poor results. With initiative and head-work they can be made helpful tools. That is what I mean by saying that system and initiative go together - at least the only kind of system we have use for in the Forest Service. The idea of standardization can, of course, be carried too far. It must not pass the point - and the Forester will see to it that it does not pass the point - where it is of real service to the aggressive, resourceful man on the ground.

"Is It True?" - An Answer

by Ward Shepard, Washington

The article quoted under the above title from the "Efficiency Magazine" betrays its motive near the end in the statement "These are a few of the reasons why nationalization always has failed and always will," and "Nationalization is....a destroyer of trade and commerce."

The motive becomes still clearer when it is realized that the article first appeared a couple of years ago in England at a time when the nationalization of the English coal mines was demanded by powerful labor groups not only as a means of ending a wild orgy of profiteering in coal, but of assuring decent wages and living conditions to the miners.

This attack upon civilian government employees was therefore not an unbiased inquiry, free from "rage and prejudice," but a piece of propaganda against nationalization. It would be a mistake to take it more seriously than its purpose warrants. After all, a cat that is being chased up a tree can hardly be expected to have an amiable opinion of the dog that chases her.

This tradition against government "interference" probably started about forty thousand years ago when some wily savage first succeeded in cornering the tribe's entire winter supply of pumpkins and smoked herrings and felt incensed because they made him stand and deliver. It continued last week when a lumberman at hearings on the Snell bill, protested that the regulation of forest devastation was an invasion of the sacred rights of private property.

In refusing to take this attack seriously, we need not overlook the obvious weaknesses and faults of government organizations. They are the same weaknesses and faults that are so obvious in private industry. It is less than a year since Secretary Hoover pointed out the appalling waste and inefficiency that pervade American industry. The only remedy is for everyone, whether his job is public or private, to apply hard work and brains to make every job a good job.

"Is It True?" - An Answer (Cont.)

I have a picture of Ranger Bill riding home from Jones's sawmill, 23 miles through eighteen inches of snow; hitting the Station about 9:30 of a frosty, moonlit night; putting old Dobbin to bed; thawing his bones before the kitchen fire while Mrs. Bill puts a snack on the table; and then after supper reading "Is It True?" What will he say? Perhaps he will think of what Lincoln said when some one protested that General Grant was a drinking man. "I wish, then," said Lincoln, "that I knew the brand of his whiskey so I could send each of my other generals a barrel of it." It is too bad that some of our private industries can't adopt a little more of the "inefficiency" of Ranger Bill and his kind.

Enlargement of Powers of U. S. Commissioners
by Roy Headley, Washington

At Mather Field it was recommended that legislation be urged enlarging the powers of U. S. Commissioners to enable them to try misdemeanor cases instead of merely binding over to the Grand Jury. This would substitute one trail, such as occurs before a Justice of the Peace, for the present procedure of preliminary hearing before the U. S. Commissioners, indictment by a Federal Grand Jury, and trial before the U. S. District Court.

A bill was introduced in April, 1921, by Mr. Barbour of California to secure this enlargement of the powers of U. S. Commissioners. If we could expect the passage of this bill the end of delays and vexations in the handling of Federal cases would be in sight.

Mr. Barbour's bill is now very much overshadowed by the movement sponsored by Chief Justice Taft to increase the number of Federal judges. The best informed opinion in Washington is that it would be an unwise thing to seek legislation enlarging the powers of Federal Commissioners in the face of the movement now under way for more judges.

What Have You Done?

Remember that "slam" you took at the Service Bulletin not long ago when you were talking to one of your Service friends? What was it, now, you said? "Poor stuff; lacks pep; not worth reading, etc!" Perhaps you were right, but what have you ever done to help make the Bulletin more worth while? Run your eyes over the following table. Are you one of the 120 men listed or just one of the knockers. Hang up your hammer and try using a pen or typewriter for a change. The "wanted" sign is always out for news and stories. Let's make the 1922 Service Bulletin a real whirlwind, not a knot-hole draft.

Record of Special Articles in "Service Bulletin"
(Jan. 1 to Dec. 31, 1921)

Source	No. Articles	No. Contributors	Remarks
Washington Office	102	36	4 men contributed 51 articles
Madison Laboratory	2	2	
D-1	20	16	
D-2	15	11	
D-3	12	7	
D-4	6	5	
D-5	22	17	
D-6	17	13	
D-7	14	10---50% by Exp.Sta. men	
D-8	2	1	
Collaborators	4	2	
Total	216	120	

Note: Of the above total, 47 articles were contributed by 26 Research men Less than 10% of the contributors were Rangers.--Editor.

MY STANDARD CREED

(To be sung to the tune of Clementine)

Supervisor with a standard
Uniform and union suit,
Starts to make a standard Ranger
And to settle all dispute.

Chorus.
Here's your standard
Here's your standard
For results I do not care,
If your actions are all standard
You'll be doing pretty fair.

Here's your standard Ranger District,
And your standard Station too,
You must raise a standard family
For a standard fire crew.

Chorus.
Here's your standard
Here's your standard
Always wear the uniform,
Keep it spotless for Inspection
Don't go out in dust or storm.

Standard Ranger takes his Lizzie
Fills the tank with Standard Oil,
Starts to find a standard fire,
Standard slope and standard soil.

Chorus.
Here's the standard
Here's the standard
He must never use his head,
He found the fire wasn't standard
He came home and went to bed.

Now the Super's cussing madly
At the standardizing plan,
For he has a standard Ranger
Where he really needs a man.

Amen.--R.H.Chapler, D-6

WASHINGTON NOTES

Mr. Gifford Pinchot, Commissioner of Forestry for Pennsylvania, served as Chairman of the Forestry Committee of the National Agricultural Conference held in Washington during the week of January 23.

Elk Movies: Motion pictures of the Northern Elk Herd on the Absaroka and Gallatin National Forests, Montana, will be taken this week by cinematographers of the Department Motion Picture Laboratory working in cooperation with the Service men in D-1. It is expected that the District will send the Bulletin an interesting story on this work.

Henry S. Graves is to return to the Yale Forest School as Dean, thus allowing Dean Toumey to resume his scientific investigations.

F. C. Crass, after nine busy years with the Forest Service, has been transferred to the Department Office of Exhibits. Through this transfer, Mr. Crass will obtain a broader field of activity and greater scope for his artistic talents. Entering the U. S. Geological Survey in 1903 as Lithographer, Mr. Crass changed to the Forest Service in 1913, since which time he has done yeoman's service in map making and exhibit work

Supervisor John W. Spencer of District 2, who has been on detail in Washington in connection with the rating of Rangers' examination papers, left for the snowy wastes of the Battlement National Forest on January 23.

Butler Goes to the American Forestry Association: Orvid M. Butler, Assistant Director of the Forest Products Laboratory, will soon leave the Service to become Forester to the American Forestry Association. When the Association recently reorganized its program, it decided, among other things, to employ a forester who had already gained his spurs in the profession and who, combining the confidence of his fellow-foresters with ability to deal with the public, would be able to advance the great objects of forestry.

Mr. Butler was chosen as the man with these qualifications. He has had a rapid rise and a wide experience in the Forest Service. Entering in 1907, after graduating from the Yale Forest School, he became as early as 1911 Chief of Silviculture in District 4. In 1914 and 1915 he was in charge of the study of lumber distribution, a part of the important lumber study undertaken by the Service at that time; and published the results of this work in two bulletins on "Distribution of Softwood Lumber in the Middle West."

In April 1916 Butler was transferred to the southwestern District as Chief of Silviculture, but at the outbreak of the war he went to Madison as Assistant Director of the Laboratory. Since then he has done considerable writing, including various articles on better utilization of wood and the chapter on "Forest Depletion and Lumber Prices" in the Capper Report.

The employment of a man of Butler's training and experience promises well for the future work of the American Forestry Association, and his friends in the Forest Service will watch his new work with interest and with the expectation of solid achievements in forwarding forestry.

FOREST PRODUCTS LABORATORY

D-2 Invades the Laboratory: Three Forest Supervisors, an Assistant District Forester, a District Fire Chief, and a Fiscal Agent invaded the Laboratory for a three-day allotment conference this week. Except for the half-day spent in making the rounds of the Laboratory the Supervisors were closely engaged with the D. O. bunch trying to relieve them of all the district funds and keep the rest of the Supervisors whom they meet in later engagements from getting their share. A smoker by the Forest Products Club gave the Laboratory men a chance to hear a description of the allotment conference and of the Lake States Forests. Marshall, Dahlgren, and Schreck of the Minnesota, Superior and Michigan Forests were at the conference; also Granger, McLaren and Buckner from Denver.

The Wood Identification Grist Mill: A recent month's run included: a sample of wrapping paper from Brazil in which the microscope revealed rice straw and traces of coniferous ground-wood pulp as the fiber in its structure; a polished wood slab of great hardness and abnormally heavy that was scheduled for use as a pedestal base sent by the Arizona Archaeological and Historical Society of Tucson, Ariz., was identified as a partly fossilized cupressus; a blackened, water-soaked specimen from a deep excavation at Unaka, Tennessee, identified as beech.

Perpetual Motion: "We have a small sawmill, run by a gas engine, cutting hardwoods. Much sawdust collects. We understand that wood alcohol can be extracted from this sawdust. How is it done, as we want to use the alcohol to run our gas engine?"

This amounts to: running the engine by alcohol, to cut wood, to make sawdust, to make alcohol, to run the engine, to cut wood, to make sawdust, ad infinitum.

We told our correspondent only two things stood between him and the happy, endless chain above: (1) the making of alcohol from wood is a complicated chemical process requiring much expensive equipment; (2) when he finally got his alcohol it would cost him twice as much per gallon as gasolene.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The Annual Meeting of the Reorganized Colorado State Forestry Association was held with a banquet at the Adams Hotel January 17. Mr. Lou D. Sweet was reelected President and all the other officers were reelected except that Mr. P. L. Clarke was put in as Secretary-Treasurer in place of Mr. Alvin T. Steinel. The main address was made by Hon. Frank C. Goudy, and resolutions were adopted in support of the Snell bill, the extension of game refuges and opposing the transfer of the Forest Service to the Interior Department or the new Department of Public Works. Forty-two people attended the banquet, and the whole meeting was in every way successful.

The National Western Stock Show is bigger than ever this year. The Department of Agriculture exhibit, in which the Forest Service is cooperating, is attracting considerable attention and very favorable comments.

The Colorado Game and Fish Protective Association at its annual meeting at the Brown Palace Hotel elected the following officers: Joseph D. Pender, Denver, President; F. P. Stover, Ft. Collins, 1st Vice-President; John H. Hatton, Denver, Secretary-Treasurer.

The District Office Meeting held January 18 was in charge of the Office of Public Relations. District Forester Peck made a few introductory remarks concerning the reorganization of Departments of the Government, and Mr. Wheeler expressed briefly the relations of the Office of Public Relations to the other offices, but the main feature of the day was a lecture on Forest Service work given by Mrs. Margaret W. Chipley, illustrated by 75 slides. In 1921 Mrs. Chipley gave this lecture before 10,000 children of the public schools of Denver.

C. G. Bates, Silviculturist, addressed the Denver branch of the Society of American Foresters January 18 on the importance of the woodland type, particularly the pinon-juniper portion. Some of our worst floods, Mr. Bates stated, originate in this type, due largely to two factors: 1, that the rains are often excessively heavy, and, 2, that the soil in this type naturally absorbs water very slowly until after it becomes wet. These two factors both encourage excessive and rapid surface run-off. The cover, even though scanty, tends to mechanically obstruct run-off and make the soil more retentive. Both the shading of the soil and transpiration tend to prevent that superheated surface strata of air and other factors which result in the excessive downpours commonly called cloudbursts.

Minimum Requirements: On January 5 a meeting of the Denver section of the Society of American Foresters was held at which a report on the minimum requirements for the lodgepole pine region prepared by Assistant District Forester Thompson was presented, and considerable discussion was had regarding the requirements to be fixed for various types in the region. About 15 persons attended the meeting, all of which seemed very much interested in the subject.

Telephone Education: Telephone Engineer Kylie has started on the regular telephone educational work for the District and expects to hold two meetings at Salida, one at Glenwood Springs, and one each at Fort Collins, Lander and Steamboat Springs. Fifty to sixty men will attend.

Ranger Bill Says:

The feller that's always busy at trifles don't usually get time for the big jobs.

I'm studin' hard to get the Manual learned 'fore they revise it.

Daddy does the District Forester talk about the Service in his sleep? asked my boy t'other night.

DISTRICT 3 - SOUTHWESTERN DISTRICT

They Waited for a Chance: In the Point of Rocks Canyon on the Datil there is a peculiar situation in reproduction that tells a story. The area lies at an altitude of about 8,300 feet, and Douglas fir is found in mixture with yellow pine. The mixed stand contains some scattered very large Douglas fir trees. In 1910 the area was logged off in a timber sale, but not many of the big firs were cut. The locality seems better suited to fir than to pine because the young firs are thriftier than the pines, but before cutting took place there was a strong predominance of pine in point of numbers. This leads to the thought that the original stand was principally Douglas fir. Perhaps a fire went through in an ancient day and destroyed it all with the possible exception of a tree here and there. Under these conditions, without the shelter of a parent forest, the fir could not re-establish itself, so the pine assumed possession. Then under the protective shade of the pines, the firs took their advantage and now are well ahead in the race for preeminence and eventually, barring the accident of fire, there will likely be another dense forest of Douglas fir.

We Still Keep Up the Climate, However: Cynical stranger, after viewing certain parts of New Mexico: "This country may have been all right when it was made, but the maintenance work on it certainly hasn't been kept up."

Viewed From Outside: A recent caller at the Ranger Station stated that he noticed good grass on the Dry Canyon allotment, then asked if there was any chance to get a grazing permit for 40 head for the winter season. On being told that the range was fully stocked, he asked what would be the consequence if his cattle drifted on to Forest range and remained for a month or so. On being told that he would be trespassing, he said that he would be willing to pay for the pasture at the trespass rate for the entire winter season.

Game on the Carson: While there is probably no better trout fishing in the U. S. than in the streams of the Amarilla Division, that country, once abundant, now is almost devoid of any kind of land game. Not a deer or turkey sign, and only a few grouse were observed. This division of the Carson went through a mineral boom years ago with hundreds of miners making their temporary camps here, there and everywhere, and living as much as possible off the country. These were followed by the sheepmen with their huge bands of "woolies." With the succession of irresponsible prospectors and invasion of sheep, there was little chance that the game could survive in any great numbers.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Two Lynx Caught in the Same Trap: A few days ago while in Linwood, Utah, for supplies, Mark Anson, a resident of that place, requested me to go with him to Henrys Fork Creek back of Linwood and see his catch of furs. On arriving at the designated place I observed two full-grown lynx cats in the same trap. One was caught by the left front foot, one toe being between the jaws of the trap and one toe between the jaws and the spring. The other cat was caught by the right front foot and was evidently the one that sprung the trap. It was quite evident by their looks that each one had thought the other responsible for his predicament, as both of them were badly scratched and torn about the head, but were perfectly quiet when we arrived.

Interesting Discovery: C. A. Sommers of Jackson, while cutting wood in Flat Creek on this Forest, discovered a rather interesting curiosity which is now on exhibition in this office. It is a buffalo leg embedded in the trunk of a Douglas fir tree. The skin is intact and considerable hair remains in a good state of preservation. About four inches of a large tendon protrudes and is remarkably well preserved. The entire hoof was intact and protruded from one side of the tree, but unfortunately, the hoof was broken off in moving the tree. By counting the growth rings the approximate age of the section of the tree in which the leg is embedded is two hundred years. An irregulatity in the rings about fifty years before the death of the tree would seem to indicate that the leg began to influence the growth of the tree approximately fifty years before the tree died. The tree has probably been dead about five years. The bone was deposited in a fork formed by a limb twenty-seven feet from the ground and was probably carried there by some animal.

DISTRICT 4 (Cont.)

Supervisor Talks to Students: A talk on the meaning and importance of our local National Forests was given by the Supervisor to about 50 students in Biology at the Uintah State Academy. It was a surprise to find that there were this many young people in this section studying and apparently interested in this subject. The opportunity was taken to include an explanation of the enlarged Forestry program.

Annual Grazing Reports Contain Valuable Information: Some very interesting and valuable information is being obtained in a few of the annual grazing reports with reference to the total number of stock in the vicinity of National Forests, the total amount of private land, separated into hay land, grain, grazing land, etc. In one case where very full information was given, it is shown that the Forest, which is now fully stocked, is taking care of slightly over 10 per cent of the cattle in the region of the Forest and between 1/4 and 1/3 of the sheep. This sort of information is extremely valuable and seems absolutely essential to the best planning for grazing administration, in order that rules as to dependency, maximum and protective limits, degree of utilization, methods of handling, etc., may be intelligently worked out.

DISTRICT 5 - CALIFORNIA DISTRICT

Mr. Wells Retires: With fifteen years of service to his credit, John C. Wells retired from active duty January 4. He will receive the pension provided by the Retirement Law. Mr. Wells first entered the Forest Service in 1901, when it was under the control of the Department of the Interior. He advanced through the grades of Ranger, Deputy Supervisor and Supervisor, and at different times held assignments on the Mono, Stanislaus and Tahoe Forests. In 1912, he resigned from the Service but returned in 1917 and was assigned to the District Office, where he was employed until the date of his retirement.

Killing Skunk Cabbage with Gasolene: A prominent resident of southern California successfully killed off large quantities of skunk cabbage on his meadows this year by squirting about half a teaspoon of gasolene into the top (the spiral cup or boat) of each plant. He states the results were marvelous; if the day was warm the plants would immediately wilt after the application. Investigation showed that the gasolene followed down the stem and into the bulbous root as though it were a lamp wick, and in a few days the root was rotten and dead.

The gasolene, being directly applied to each individual plant, did not in any way injure the adjoining vegetation.

The cost of the operation was very small.

The cabbage was last year cut off just below the surface of the ground, but reappeared this year in much greater density. The gasolene experiment is worth trying.

A Mexican Forester: We had a very interesting caller recently - a young man from Mexico, who said he was connected with the Mexican Forest Service. He wanted information particularly in relation to timber - how timber sales were handled and the prices at which timber was sold. He said the Mexican Government was going to make a cruise of the timber in lower California. In discussing the stumpage prices for the different species and classes of timber, he said, "Mexico has all the different classes of timber that you have, and, in addition, we have an abundance of the more valuable hardwoods, such as mahogany."

Forest Fire Prevention in Schools: The last session of the California State Legislature passed a law making compulsory the teaching of fire prevention in the State schools. The National Board of Fire Underwriters furnished a text-book covering all features of fire prevention except forest fires and none was available for that purpose. This office has just completed the draft of a textbook on forest protection and fire prevention, which is to be published by the State Forester and the State Board of Education. This little book will have five lessons of about 600 words each and each lesson will be illustrated with five typical photographs and will be followed by several questions bringing out the most pertinent points in the lesson. The State Superintendent of Public Instruction has promised to see that the subjects covered in this textbook are first put before the school children of California during Fire Prevention Week next May.

DISTRICT 6 - NORTHERN PACIFIC DISTRICT

Recreation Working Plans: F. W. Cleator has been engaged during the entire field season on the important work of drawing up recreational working plans. These plans deal with an entire drainage unit or watershed and have for their purpose the deciding in advance of what areas are most suitable for the various recreational uses. Such plans have been completed or are now in progress for the following areas:

The Metolius River on the Deschutes
The Lake Chelan region on the Chelan
Naches Valley, Rainier
Keechelus and Kachess Lakes on the Wenatchee
Lake Crescent and Lake Quinault on the Olympic

A general recreational reconnaissance was also made for the Umatilla Forest.

Them was the Days! C. J. Buck recently dug up an interesting historical record. It is a copy of an order sent by him to the Fechheimer Co. for a Forest Service uniform, 3-piece, of 18 oz. forestry cloth, on Jan. 4, 1909 - and the total cost for the coat, vest and trousers was $13.90.

"Improving Nature": According to a newspaper report, some Indian braves of the Yakima Reservation objected seriously to a large cigarette sign painted on certain sacred "painted rocks" on the Reservation. The sign was to have been equipped with electric lights and would have been visible for a distance of 12 miles. The Indians objected and tried to catch the enterprising sign-painter, but he escaped on the North Coast Limited.

The Milk of Human Kindness: That a simple act of kindness may turn an enemy into a friend was evidenced by the following episode: A stray cow had been found by a rancher, who asked the local Forest office to help in locating the owner of it. A letter was written to a rancher who was thought to own the cow. This man on receipt of the letter came into the Forest office and said that he had never thought much of the Forest Service or Forest officers, but that when they took pains to go out of their way in trying to find the owner of a stray cow, which had absolutely no connection with their work, Forest officers must be pretty decent fellows, and that although he didn't own the cow, he felt that the Forest Service was working for the interests of the ranchers and he certainly appreciated their action in this matter.

Forest Service Map as Library Exhibit: The relief map of the Mt. Hood region, made some years ago, was retouched and additional improvements put on last summer. This map shows the Columbia River Gorge, Mt. Hood, Eagle Creek forest camp and adjoining country, as well as Forest Service trails, telephone lines, lookout and Ranger stations. It was loaned to the Library Association of Portland early in September and has been used since as a special exhibit in the Central Library and in the North Portland Branch. So much interest has been shown by the public and so many inquiries were made in regard to the map and the Forest Service work in general, that the District Office was requested by the library to furnish explanatory material. A large number of copies of the folder, "Forest Trails and Highways of the Mt. Hood Region," were furnished the library for distribution in connection with the exhibit.

Arrangements have also been made to show the map during the next six months at the six other branch libraries which have exhibit space.

DISTRICT 8 - ALASKA DISTRICT

About Bears: An article appearing recently in the Ketchikan, Alaska, Chronicle, states that a grizzly bear has been killed at the mouth of the Taku River by Forest Ranger Jay P. Williams. It states also that eleven shots were required to stop the animal and these from the best shot in Juneau.

We all know that Jay is a good shot, probably the best in Alaska, and he carries a good gun - a high power repeating rifle.

The question I want to raise is this: Why is the Alaska Grizzly so hard to kill?

The grizzly bears of the western United States were practically exterminated before the breech-loading rifle made its appearance, to say nothing of the repeaters and the modern high-power smokeless guns. And there were probably more bears killed and less men chewed up then than there are now.

In the early days a hunter armed himself with a muzzle-loading rifle and a six-shooter of the cap-and-ball type. Providing he had no mis-fires this gave him seven shots - one from the rifle and six from the side arm.

The plan of attack was to open fire with the rifle, aiming the shot at the bear's head. It was not expected that one of these guns would penetrate a bear's forehead, but was intended to stun the animal and then finish up the job with the pistol before the bear recovered.

Now compare this with the modern hunter pumping ten or a dozen high-power bullets through a bear before he is stopped, or before he has time to stop, and tell me where the difference comes in. Was the old-time hunter a better marksman with better nerve, or is the Alaska bear harder to kill, having become a tough customer on account of closer contact with the human population of the territory?--Tongass.

Pickleboats

The Bulletin of July 11, 1921, bears a caption "Superior Overseas Fleet." I presume the word Superior refers to the Forest and not to the fleet. I guess you have got us on the number of boats you have mentioned of the kind you would most likely use there. Our property records show only four Evinrudes, while you state you have seven. Or perhaps you use some other kind of outboard motor? But when it comes to real, honest-to-goodness SHIPS - OH BOY - go way back and sit down. Just to satisfy the Superior and any others that may inquire regarding our fleet, I will enumerate:

Hiawatha	98 ft.	160 HP
Tahn	65 "	75 "
Wepoose	58 "	40 "
Ranger 1	35 "	25 "
Ranger 2	35 "	25 "
Ranger 3	35 "	25 "
Ranger 4	45 "	20 "
Ranger 5	42 "	25 "

Here are eight real boats. They are all seagoing boats, too. If you think we don't go to sea in 'em, come on over and take a ride - the water's "fine."

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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MATHER FIELD CONFERENCE IDEAS

Ways of giving the members of the Service the benefit of the many excellent ideas advanced and discussed at the Mather Field Fire Conference have been troubling members of Operation since the meeting adjourned.

This is the best that can be done it seems:

1. The Committee's report as approved by vote of the meeting, with brief comments by the Forester, will be mimeographed and distributed to each Supervisor and District Ranger. This report will reach the field as soon as it can be turned out.

2. The Bulletin for the next several issues will contain extracts from the papers which were read at the meeting. Coherence will be often lacking, but the idea will be grasped.

Here is the first:

Getting Things Done

By C. M. Granger, D-2

Two fundamental things are necessary in order that accomplishment may be placed where it should be: (1) development of pride in accomplishment; (2) preparation and following of thoroughly coordinated plan of work.

The feeling which must be engendered in the mind of the successful forest officer, and I speak now of the Ranger because he is the man who really puts into effect the bulk of the Service policies, is a feeling of personal pride in what he has been able to accomplish.

There are men who are born with this pride. A satisfied conscience is usually their greatest reward. There are others in whom this pride is latent and needs awakening. Fortunately, not many men in the Service fail to readily respond to an effort to develop this pride.

Competition is probably the greatest single incentive to accomplishment.

Reward in some form or other must be forthcoming where good results are secured.

This does not mean that each time a man does something which is part of his daily work, even though it be more or less outstanding, he should be written a letter of commendation. It does mean, however, that men who are getting things done should be put in a different class from those who are drifting, so that promotion and other reward may go where deserved. Similarly it means that men who are standing still or who are falling behind and who can not be brought out of it, must be separated from the organization.

Personal ratings play a prominent part in keeping men on their jobs. I would by all means have an annual rating of every man and a frank discussion with him on the faults and virtues disclosed by this rating. This should not be a comparison with other men's virtues and faults, but instead a constructive talk designed to bring out in an understanding way just what is holding a man back or what are regarded as his outstanding values.

Men bubbling over with energy often fail to get things done. * * With a man imbued with pride of accomplishment things will be done if he can and will make use of plan and schedules.

It is the Supervisor's job to bring about the use of plans and schedules. He must do this, first, by helping the Ranger make his plan, and second, during his trips to a Ranger's headquarters he ought to go over the ranger plan of work. It must be borne in mind by the whole organization that plans are for use and their use must be checked. A most effective way to get at this is by actual review of a Ranger's diary.

To my mind, use of the schedules in connection with comprehensive plans is the biggest step before us in getting 100 per cent efficiency instead of probably about 60 per cent, our present standard of effectiveness.

Inspection is the one thing which will disclose accomplishment or lack of it. Inspection to be effective must not only be thorough but must conform to some sort of a definite outline. An inefficient inspector is regarded neither with liking nor respect.

One more thing necessary to accomplishment; never admit that we are overworked - we are not.

Say What You Mean and Stop

"Verbality" is one of our greatest curses.

It produces those gray seas of wordiness, in letters and reports, that give us all a headache.

Most people talk with some color and snap. But when they write, they commit every known crime against the mother tongue. Pages would not analyze these crimes, but the worst is using ten words when one would do better. I accept bad grammar, I ignore poor spelling, I can even stand the cute "Prince Albert" style of writing; but good Lord save us from "verbality!"

Prolixity in writing means muddiness in thought. The best thing anyone can do for his writing (and what a boon it would be to his readers!) is to cut out one-third to three-fourths of the words in whatever he has just written.

The Book of Job, Robinson Crusoe, and the Speeches and Letters of Lincoln are the best text-books on writing English that I know. Their language is as lean and beautiful as a race horse. Anyone who reads them with attention will never again be quite so willing to flood the world with sloppy ideas dressed in slovenly language.

In brief, let us say what we mean and stop.--Sage-brush Sam.

Winter Fires

By Lenthall Wyman, Southern Experiment Station

Fires are not new to the Forest Service personnel, but January fires are not common, and a fire season in the middle of the winter is distinctly novel. Right now when the District Foresters from one to eight are sitting back serenely confident that fires are the least of their immediate worries, the staff of the Southern Forest Experiment Station is beginning to stir around uneasily, equally confident, but reluctantly so, that half of the range in the longleaf pine region will be black and charred before Easter Sunday.

January, February, and March are the big fire months in the coastal plains region in spite of winter rains and weather generally unfavorable for the spread of fire. The reason lies in the deep-rooted belief of the farmers and stock owners of the South that fire benefits the range and helps their cattle to winter by burning away the old grass and letting the stock get at the new growth a little earlier and easier than they can in the "roughs" or unburned areas. Accordingly about now and for the next two months most every farmer is a member of the fire organization - informally pledged to assist in burning the range. A stockman will drop a dozen lighted matches in a day and the fires will go tearing through the dry grass and pine seedlings until nightfall, or perhaps for days, before it burns itself out at some road or branch. This is the situation we face in the longleaf pine region at the beginning of the fire season. The problem to be solved is how to convince the "crackers" that their firm beliefs, held for a generation or two, are wrong. It looks to them like heresy to even think so. There are exceptions. Here and there an individual or even a community will be found which has seen the light, but it is so much easier to start a fire than to put it out that these few are overwhelmed by their fire-worshipping neighbors. All range is free range and everyone thinks he has a right to the grass regardless of who the actual owner may be.

Winter Fires (Cont.)

Now we are not going to try to cover the whole question of fires in the South, but there is just one more point to make clear. We don't aspire to report a fire rivalling the Coeur d'Alene and St. Joe conflagrations of 1910, the Minnesota holocaust or the Miramichi fire, but these surface fires of ours, occurring year after year, combined with hogs and devastatingly clean cuttings have resulted in the laying bare of large tracts of cut-over lands where no seedlings have ever been able to reach the stage where they could resist the heat and develop into a tree, and now even the few seed trees that were left have been burned into and blown over until there is no chance for the land to reforest naturally. The prevention of a repetition of these devastating practices and a restoring of these idle acres to their full usefulness, supporting stock and growing trees as well, are reforms most urgently needed in the South.

Another Answer to "Is It True?"

By John F. Preston, Washington

Just why such a thing should be published, I do not know, but I want to protest vigorously against the editorial policy that permits its publication. If "R.H." did not think or suspect that it was true as applied to the Forest Service, why did he submit it for publication? If I thought for a minute that it was a true statement of conditions in the Forest Service I would certainly reach for a resignation blank quick. The ideals of public service, freedom to grow individually without certain restraints of private business, the incentive of unselfish service, the enthusiasm of high purpose, the certainty of recognition for good work and personal satisfaction in accomplishment, - are they not powerful motives? The test of the organization is the product. Look at the men and women in the Service and those who have graduated from it. Did you ever know anyone who made good with the Forest Service who failed to make good in private business?

True, such a government organization with that record, with that spirit and that quality of personnel does not just happen. It is the result of everlasting effort to counteract some of the influences inherent in the nature of public service and to substitute incentives of higher caliber. Certainly, such ends can not be obtained by raising a question as to whether or not public service, and particularly Government service, is worth while or is not actually degrading to all in it.

Education in Forestry

By H. N. Wheeler, D-2

Knowledge of forestry by the public throughout the country is very limited. Even the city dweller knows something of agriculture, but not even the farmer with a woodlot has learned the rudiments of forestry. The Forest Service is doing the little that is being accomplished in forestry, but its work covers many lines other than forestry as it is understood, and little is known of its work even in the localities where its activities are greatest.

Education concerning the whole subject of forestry, and especially covering the work of the Forest Service, is necessary before there is an appreciation of the one or a sympathetic understanding of the other. Education through all possible avenues is necessary to change the situation. The Eighteenth Amendment and Volstead Act became possible because of education concerning the harmful effects of alcohol taught in the public schools. Something can be accomplished with adults, but to be really effective, forestry must be injected into the public schools. Chapters upon forestry should be placed in books of nature study, botany, physiography, biology, commercial geography, wood work, geology, history, civics and even arithmetic. The college courses offer greater opportunities and there is dire need that forestry become a part of the various engineering courses. Engineers are amazingly short of realizing the effect timber plays in watershed protection, in the prevention of erosion and regulation of streamflow. Aside from the text-book method, education in forestry may be disseminated by means of special lectures with or without lantern slides, by articles in magazines, papers, commercial booklets and guides both illustrated and nonillustrated, by moving pictures and exhibits at fairs and shows.

A little is being done along these lines, but the number of people reached is very small. People will not long support a movement even if it is to their best interests to do so unless they know enough about it to act intelligently. They will not adopt forestry as a nation-wide policy and enact legislation for the control of private forests nor even tolerate the continued existence of the National Forests unless they have at least a faint conception of what is to be accomplished.

The Forest Service was established by the sheer force of Gifford Pinchot and the hearty support of a sympathetic President. The time has now arrived when it will live or die by the will of the people. The great majority of the users of the forests realize their benefits and I believe will not readily allow them to disintegrate or be despoiled under the guise of development. We are constantly treading on thin ice. Education on forestry and the work of the Forest Service must be pushed vigorously by every means, in books, magazines, papers, before clubs, on the Chautauqua platform and through the lyceum bureaus if we would have our people realize what forestry means and secure the support necessary to make our work effective, lasting, and place it on a sound basis.

Forestry Resolutions Adopted by National Agricultural Conference

Privately-owned commercial lands, containing three-fourths of the sawtimber we have left, are being with a few honorable exceptions devastated more rapidly and completely than ever before to the incalculable injury of the whole Nation. This devastation must be stopped by effective legislation.

The scarcity of timber has already resulted in excessive prices of lumber to the farmers and consumers generally. The continuance of forest devastation will, by restricting the supply of lumber, interfere to a dangerous degree with farm development, the prosperity of agriculture, and the supply of food for our people. Therefore action to prevent further devastation of the remaining mature forests is immediately necessary and should be taken at once.

Two-thirds of our States, containing three-fourths of our people, are already dependent for timber upon the few remaining wood-exporting States, soon to be reduced to two or three. Therefore the forest problem is nationwide and the Nation itself must safeguard the interests of its people by ensuring a permanent, cheap, and ample supply of timber for their use.

Our forest lands contain mainly very young or very old trees. Therefore the harvesting of mature timber should be so conducted as to leave uninjured the middle and smaller sized trees, upon which this Nation must depend to bridge over, so far as practicable, the coming shortage of lumber.

Forest fires following after destructive lumbering have created a man-made desert about as large as the forests of all Europe except Russia and Scandinavia. Effective methods of fire prevention are well known. Therefore liberal provision should be made for complete fire protection upon public and private forest lands through cooperation between the national Government, the States, and the private owner.

There is no public market information service for forest products as there is for other farm products. Therefore such a service, covering the production, sales, shipments, and prices of forest products both in the United States and in foreign countries should be collected and disseminated to farmers and other consumers and producers by the Government at public expense.

Continuous and profitable forest production requires comparatively large areas of forest land. Therefore cooperative forest production offers special advantages as applied to scattered woodlots on farms. It should be specifically authorized by legislation wherever such legislation does not already exist.

The same reasons which recommend the cooperative purchase and sale by farmers of other products and supplies apply equally to products of the forest. Therefore such cooperative purchase and sale should everywhere be authorized by law and widely practiced among farmers.

Extension work in the production and harvesting of forest products is as necessary to the farmer as similar work dealing with other products. It has hitherto been neglected. Provision to extend such help in better methods of handling farm woodlots should be provided under the same conditions.

United States is barely sufficient, under the best protection and management, to meet the present needs of our people, therefore the total forest acreage of the United States must not be reduced, but on the contrary must be increased wherever practicable by the inclusion of land not more valuable for other purposes.

Throughout the world, publicly-owned forests are better managed, better protected, and more productive than those in private hands. Therefore the present area of public forests, national, State or municipal, should not only be kept rigorously intact but increased as rapidly and extensively as possible by purchase, gift, or exchange, and by additions from other public lands.

Our country is so large that the separation of sources of forest supplies from centers of consumption results in expensive transportation charges upon the consumer. Therefore the production of wood upon land not more valuable for other purposes should be encouraged in every State and region throughout the Nation.

The axe and fires have reduced to unproductive barrens vast areas of forest lands good only to grow trees. These areas should be restored to production by fire protection and planting. Therefore assistance to private owners by furnishing planting material at cost or free should be given by the State and Federal Governments in cases where the taking over of the land and complete reforestation at public expense are not practicable.

To grow a tree takes a life time or longer and a forest crop can be harvested only at intervals far apart, therefore taxation upon forest land should be so adjusted as to assist, rather than hinder, the practice of forestry by private owners, without relieving forest property from its proper share of the common burden.

Presented by

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The Fire Eater

A new motion picture, entitled "The Fire Eater," built around a story by Ralph Cummings and starring Hoot Gibson, was recently placed on the market. Designed as a typical melodrama, it contains many thrills, the most spectacular of which are the forest fires which have been produced with vivid, sweeping realism. The reviewer characterizes it as "a vivid picturization of the dangers which a ranger faces - hated because of his authority, making friends only to lose them, getting his fists involved wherever he turns, but coming out on top - it's a Great Life."

The story: "Smilin' Bob" Corey and his patrner, Jim O'Neil, rangers, hope to make a "peaceful penetration" into Paradise Valley, in which Lamar, a notorious lumber thief, and the uneducated settlers, are fast robbing the mountains and valleys of their pristine (Sic) glory. But they find themselves objects of hatred, and Corey is despised by the girl he falls in love with. A "bad" man of low caliber is sent after Corey, but the latter beats him in a fight and forces him to tell some of the secrets of Lamar's crookedness. From then on it is a hot fight to convince the people that rangers are not "snakes" and that promiscuous timber cutting is ruining the valley."

The picture, it is said, will be appreciated most for its scenic and photographic effects. Where there is close inspection of the story, and in many cases there will not be, the implausibility and uncouthness of certain situations will not go unnoticed. The incident that starts the fire - when the old man who has spent his life in the timber district carelessly touches a match to his own lumber piles just so that the ranger will not discover them, thereby endangering the entire valley - might be questioned.--H.

Education in Forestry (Cont.)

Mrs. Juliet B. Webb, of the Branch of Engineering, had a miraculous escape from death in the Knickerbocker Theater disaster, wherein 97 persons lost their lives, which occurred on the night of January 28. Mrs. Webb was sitting in the balcony when the roof of the motion picture house, laden with snow, collapsed, carrying the balcony with it to the ground. When she regained consciousness she found a man lying across her limbs, her hand clutching a little boy, and two immense blocks of concrete forming a roof over their bodies. Through this opening an escape was made from the ruins. Mrs. Webb suffered fractured ribs and severe bruises, but is convalescent in the hospital.

Beautiful Snow? The most severe snowstorm since 1899 swept the city of Washington with 26 inches of feathery flakes on January 26-28. Street car traffic and business in general was more or less suspended for two days. Government employees were granted leave at 3 p. m. on the first day of the storm in order to enable them to reach their homes. The Atlantic Building the next morning presented a weird assortment of forestry garb, from heavy hob-nailed boots to skull caps and sheepskin coats - dug out by forest officers from the moth balls. But even the men and women who lived miles out in the suburbs arrived on time after a hard tramp. Rain and warm weather followed the storm and turned the streets into a quagmire of slush, ankle deep.

Col. Greeley left to-day for Houston, Texas, where he will address the State Forestry Association. He also expects to stop en route at the Southern Forestry Conference at Jackson, Miss.

Forest Supervisor T. H. Gill, has been detailed to handle the Forest Service publicity work in connection with the Southern Forestry Conference. From Jackson, Miss., Mr. Gill will go to Denver for a detail in the D-2 Public Relations office.

FOREST PRODUCTS LABORATORY

Paper from Oat Hulls: Recently a series of studies on the use of oat hulls for strawboard and paper pulp manufacture were completed at the Laboratory, the work being done under cooperative agreement with the Quaker Oats Company. The results obtained point to the possibility of a new raw material for making strawboard, and, with the addition of cheap grades of cotton linters and some straw, better board than is now being commonly made of straw alone. In addition, bleached pulp for high grade book, magazine and writing papers was made with the oat hulls and good grade cotton linters, opening up a field of large possibilities. At the present time more than half a million tons of this raw material is annually going largely to waste, as no satisfactory use has been found heretofore for oat hulls. As fuel they have not been a success. The new discoveries, if put into commercial practice, should bring our rolled oats to us in oat-hull fiber packages, shipped in oat-hull boxes. And while we eat our morning dish of oatmeal we may read the words of our favorite author printed on oat-hull book paper.

Another Westward, Ho!: Manufacturing practice in many western mills in the field of nomenclature, sizes and grades of lumber will be studied by two Laboratory men from the section of Industrial Investigations during February, March and April. The trip is to be concluded in time for the attendance of these men at a country-wide conference to be called in April looking toward a unification of the many conflicting grading rules now in use in the industry. The Forest Service is taking an active part in the calling of this conference, at which it is hoped great progress will be made not only in clearing up the grading rule situation, but also getting action on a more uniform nomenclature of lumber species and on sizes of finished lumber.

Kiln-Drying Missionary Expedition: Armed with a truck load of instruments, literature and other plunder pertaining to the gentle art of kiln drying as it is practiced at the Laboratory, three pilgrims of the timber physics section turned their faces westward this week. If the West is not kiln-dry broken by the time this crew finished in April its series of courses at western mills, it is not because the opportunity has not been given. The full-fledged laboratory course in this subject given so far to 199 men in the past two years will be given in full with all trimmings and side dishes at four western towns:

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Sherman and Norcross Visit D-2: District Forester Allen S. Peck met Associate Forester E. A. Sherman and Chief Engineer T. W. Norcross of the Washington office in Cheyenne, where a conference was held with commissioners and others interested in the roads of Wyoming. They have also been in conference with Colorado State and Highway officials in Denver.

Jacks and Follies was the title of a performance put on by the office force of D-2 on the night of January 26. The auditorium of the Women's Club Building was comfortably filled and all spectators enjoyed the program from start to finish. About $150 was cleared from the receipts which will be used in the construction of a recreation cabin on the Pike Forest for the use of Forest Service employees.

Grazing Fees Coming In: More than 96 per cent of the grazing fees for D-2 have been received, and it is expected that by March 1 not more than 2 per cent of the fees expected will remain unpaid. As an illustration of the efforts of stockmen to meet this obligation, the District has received in January up to the 26th inclusive, $23,623.00, an average of nearly $1,000 per day. This is rapidly wiping out the delinquents.

Decrease in Grazing Permits for 1921: The tabulation of the annual statistics as compared with the annual statistics for 1920 were over 46,000 less cattle and more than 100,000 less sheep permitted in the Forests of District 2 in 1921 than in 1920, representing a little over 12 per cent decrease in the cattle and about 10 per cent decrease in the sheep on the basis of permits actually issued for the two years. This, however, does not express the real situation as to utilization during 1921. In many instances, especially with sheep, the permittees did not bring their stock to the ranges and a 15 per cent reduction in both cattle and sheep would represent more nearly the actual use of the ranges in 1921 as compared with 1920.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Yes - There is salting and salting:
The Range! A large cattle allotment lying along the slope of a low mountain chain. Well watered at west end. East end mostly temporary water in winter.
The Ailment: Cattle were inclined to hang around permanent waters, even when the temporary water was out in east end. Uneven, and unsatisfactory utilization.
The Known Cure: Ten miles of fence (postponed account of hard times).
The Tried-out Remedy: No winter salting in region with permanent water. Abundant salting in east end. Shove cattle back from, and if necessary close, west waters.
What Happened: We quote, "-------find salting on east end of range works fine. My cattle are all on east end and have been since outside water dried up. I closed all my old tanks as I told you I would and had very little trouble keeping them away. After a couple of weeks they stayed. My cattle have wintered fine-------."
Note: This is not a visionary proposition but the history of an actual series of events. It was one of the many practical D-3 problems to which is being applied a right method and the quotation from the permittee's letter states the usual and expected answer.

Publicity that Counts: Some weeks ago Supervisor Hoyt of the Sitgreaves gave the following convincing news item to newspapers of his Forest.

"Of the receipts from various uses and privileges on the Sitgreaves Forest for the fiscal year 1921, $282.94 was returned to Apache County; $1,438.85 to Coconino and $2,548.77 to Navajo. This does not include $2,422.73 that goes into the State treasury from Sitgreaves Forest receipts for distribution to the counties, nor the more than $32,000.00 the Forest Service contributed that year toward the Snowflake-Pinetop road.

"For wages to local people, not including $15,083.47 salaries to local Forest officers, the Sitgreaves paid $2,424.51 and purchased $668.02 worth of local products. In the past few years the Forest Service has constructed and maintains 165 miles of telephone line on the Forest, of which the public has free use. Several thousand dollars have been put into the development of water to improve the range and the material and some labor furnished for over 80 miles of four strand barbed-wire fence to facilitate handling of stock on the range and better conserve the feed."

DISTRICT 3 (Cont.)

Big Buck Appeals to Ranger for Protection: Two dogs recently chased a big buck down into a field of the Fairchilds Ranger Station on the Lincoln just about dusk. The Ranger with his trusty 30-30 at hand fired two shots at the lead dog. While he did not make a hit, it stopped the dogs and the old tired buck standing a hundred yards across the canyon had the pleasure of seeing his pursuers duck and take the back trail.

A Million a Month: During the month of December, 1921, the Santa Barbara Tie & Pole Company operating on the Carson managed an output of 29,000 sawed ties, 4,000 hewed ties, and 50,000 B. F. of lumber, a total of 1,040,000 B. F.

Ranger Bill Says:

The Lord made the forest but I kinda hesitate to hold him responsible for some of its users.

The new Forest Assistant's got so he can tell a punky tree after it's cut.

Now that they're spendin' a $100,000 eradicatin' the pine beetle, I wonder if we could get a little rat poison for the Ranger Station, said my wife.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

The President's Forest: In the January 14th issue of the Saturday Evening Post appears an article written by Emerson Hough concerning the Kaibab National Forest. Mr. Hough contends that the Kaibab contains the greatest stand of timber now remaining in the United States and is recommending that it be created into what he terms the "President's Forest," thereby eliminating the removal of any timber or the use of any portion of the area for grazing purposes. There is slightly over 600,000 feet B. M. of sawtimber on this Forest. Sixty-four hundred head of cattle and about five thousand head of sheep are grazed.

Many Predatory Animals Killed: The Biological Survey, which is continuing the destruction of predatory animals in Idaho, reports that during the month of November its hunters killed 428 coyotes, 42 bobcats, and three gray wolves. The average kill per man was 25 animals for the month. The average cost per animal destroyed by the Biological Survey has been about $5.00. Poisoning campaigns are now being inaugurated. These are much more effective in eradicating predatory animals than are guns and traps. The fur of coyotes is now said to be worth about $10.00 in the raw state and this is encouraging private parties to undertake their destruction.

Utah Entirely Free From Scab: Messrs. Joseph Jordan and J. C. Mellor, President and Secretary, respectively, of the Manti National Forest Woolgrowers Association, called at the Supervisor's office on January 7. Mr. Jordan, who is now State Sheep Inspector, reports that Utah at the present time is entirely free from scab. Out of approximately 1,800,000 sheep inspected in the State this fall, not a single case of scab has been found.

Boise Radio Club: Word has been received from the Supervisor of the Boise National Forest, stating that the Boise High School Radio Club, under the supervision of Professor Redeker, is making quite satisfactory progress in the use of the wireless telephone loaned them by the Forest Service. They have already talked to operators of Nampa, Idaho, twenty miles distant, and the operator at Nampa states that he heard the conversation fully fifty times plainer and stronger than the conversation heard from Sacramento, California, points. The local radio operators have been receiving wireless telephone messages, orchestra music, etc., from Sacramento points, from the Fairmont Hotel, of San Francisco, and from the station in Denver for some time past.

DISTRICT 5 - CALIFORNIA DISTRICT

Forest Fire Rages in City! When the fire case against P. S. Vaughn of Potter Valley was called for trial in the Court of Justice of the Peace Hurley at Ukiah, District Fire Ranger R. E. Roach of Mendocino County, Coffman and Squires thought they had the defendant as good as convicted. The jury had been accepted and sworn and Coffman called as first witness when the attorney for the defendant called the attention of the Court to the fact that the complaint was incomplete in not stating whether or not the offense had occurred within the limits of a municipality. The prosecution was flabbergasted by the discovery that the entire fire had occurred within the incorporated limits of the town of Potter Valley, to which the State law, under which action was brought, was inapplicable. District Attorney Gibson accordingly requested dismissal of the case.

It is certainly unusual to find that one is within a municipality while fighting grass, brush and forest fire in the mountains miles from the nearest settlement, but such was the case in this instance. It seems that a number of years ago the whole of Potter Valley was incorporated so as to prevent the establishment of saloons in that vicinity.

New Phase of Insect Control Work: A reporter called at the Office the other day and got some information about proposed insect control work. The material was pretty well butchered when it appeared in a San Francisco paper, but the final touch was added by the "Bakersfield Californian," which finished with "The beetles sting the trees and destroy them." A course in the extraction of beetles' fangs would seem to be a desirable addition to the Forest Schools studies.

Sheepherder Fined: Pedro Viscay, a sheepherder of Masterra, has contributed $5.00, the estimated cost of replacement to Uncle Sam in settlement for defacing a Forest Service road sign on the Mono.

Atta Boy!

The following extract from a Cleveland Ranger's diary shows the right spirit:

"December 6, 1921.

"Stubbing telephone line, put in 13 stubs to-day, falling behind on our schedule, hard digging.

"December 7, 1921.

"Put in 13 stubs to-day, still hard digging. Will have to do better.

"December 8, 1921.

"Doing better to-day. Set 17 stubs and balance all distributed."

DISTRICT 6 - NORTH PACIFIC DISTRICT

Hobby Horses and Woodpeckers? I. G. Hougland of Trout Creek on the Colville has been experimenting on his own initiative with sawdust. By the use of steam and sulphuric acid he has made spruce sawdust into palatable feed for stock and chickens, and reports that they like it. He has sent a sample to the Madison Laboratory to be analyzed for food value.

Forest Clerk Pleads Guilty of Leaving Camp Fire Burning!! C. H. Thorp, Clerk on the Wallowa Forest, recently appeared before Justice R. McCrae, and pleaded guilty of leaving a camp fire unextinguished on National Forest land. A fine of $30 was imposed, which has been paid, and the case closed.

Oh, No! You mustn't blame C. H. for this. It wasn't his fire. The fire was left by a party of five men from Milton, on land within the Umatilla Forest, in Wallowa County, and the plea was made under a power of attorney signed by W. R. Morris, a member of the party. Credit for this conviction belongs to the Umatilla Forest.

The Study Course: Questions have gone out in this winter's study course covering these subjects: Accounts, Lands, Grazing, Administration, Range Management, Improvements, Public Relations, and General Administration. Questions on Protection will follow.

Gov't Mineral Springs Camp Grounds Popular: This is the first season that the Government Mineral Springs Camp Grounds on the Columbia Forest have been accessible. Practically no improvements have been made because of the limited funds available for this purpose. It is all the more remarkable that during the first season this camp ground should be visited by over 6,000 people. By actual count during the period from July 5 to August 29 there were 1,407 automobile camping parties at the camp grounds, an average of 26 cars per day. The same rate was maintained during the first part of September.

Canada Aroused!

By C. W. Boyce, Washington

The enormity of the losses, through forest fires and the bud worm, in the pulpwood forests of eastern Canada has strengthened interest in forestry - one of the most significant facts brought out at the recent meeting of the Canadian Pulp and Paper Association. Chief Forester Piche, of the Province of Quebec, estimates that the damage by the bud worm in Quebec alone amounts to 75,000,000 cords of pulpwood. The technical force connected with the investigations of this epidemic intimate that this is a very conservative estimate. It is reported that Price Bros., Ltd., have recently made a survey of their forest holdings and have found that their loss was more than 15,000,000 cords. During the past year the fire loss in Quebec amounted to 1,200 square miles in area burned over, valued at about $10,000,000.

That these two facts have been responsible for a great impetus in the interest which not only the people in general but the wood-using industries also are taking in forestry, is well-established. Other agencies are helping this interest along. The work of the Canadian Forestry Association, which has been gaining yearly, is bearing fruit. The knowledge that forestry is workable and is in actual practice, brought back by the Canadian foresters sent to Norway and Sweden by the Canadian Pulp and Paper Association during the past year has played an important part.

It may be asked, "Is this interest in forestry real; is it doing anything?" If the action of the Quebec Protective Association is expressive, then this interest is real and a working one. Heretofore this association has been barely able to induce its members to subscribe ½¢ per acre per year for fire protection. This year the assessments were doubled by vote of the members. Conservation in respect to the Crown Lands is about to become an established policy. The restriction of cut on the large limits is being enforced. A system of permits to enter the forest is being recommended and is sure of accord from the provincial government. Legislation along protective and economic lines is now before Parliament and is in the favor of the ruling party.

In Canada the day of forestry is slowly beginning to dawn. It has required the loss of from 20 to 30 per cent of the remaining pulpwood supplies to start it. All Canada is awakening, for the greatest asset of the country is at stake.

For these reasons the subject of "Questionable Publicity" and "Salable Publicity," which have been discussed by Morrell and Hutchinson in past issues of the Bulletin, is of immediate and vital concern to the men at the Station. I quite agree with the editor when he says that a half loaf is better than no bread, and if the American public positively refuses to read about "hard-boiled cowboys, homesteaders, etc.," while lapping up the "lady lookout" stuff, why then by all means let us give it its fill of the latter. The editor is on the firing line, and if after making an earnest effort to feed the editors of the country upon corned beef and cabbage, he finds that they are demanding truffles and pate de foie gras, I think that we will all take his word for it and try to give him no more corned beef and cabbage.

But personally I believe that editors, like the common run of human beings, are fallible, and that they have misjudged the demands of the American public. It seems to me that there is an increasing tendency toward sensational literature in the pages of newspapers and magazines that would sell just as well if a smaller percentage of their contents was what might be called literary jazz. I have half a notion that a little personal contact with editors on the part of those of us who are submitting material to them would often result in their acceptance of articles which would be rejected out of hand were they to reach the editorial sanctum through impersonal channels.

Whatever may be the truth in these matters, it seems to me that the root of the whole difficulty is the forester's failure to vision and describe the interesting things in his daily work. The more I learn of the business life of most men and women in other callings, the more I am convinced that the foresters' horizon holds an infinitely greater variety of interesting things. The scanty numbers who follow our profession - and I do not mean simply the profession of technical forestry, but the administrative work as well - are proof that the forester and the ranger, the fire lookout and the silviculturist, are doing something which is unique and therefore interesting, to ninety or one hundred millions of our population. The trouble with us is that we do not often see the colorful and intriguing aspects of what to us is a daily routine. Furthermore, very, very few of us make any attempt to express our thoughts by word or in writing when we do catch the vision. In the vernacular, we are darned poor publicity men.

What is the remedy? Certainly not an attempt to reform the general taste of the average editor through a new type of forestry articles; we have troubles enough as it is without tackling this job. The solution lies, in my humble judgment, in a long and perhaps painful course of self-training on the part of those who write or talk forestry - and that means all of us. If you want to know how to write technical or scientific stuff in an altogether charming and absorbing way, buy a volume of Huxley or Herbert Spencer, or to be more modern, some scientific writing by Theodore Roosevelt or Curator Ditmars of the New York Zoo. Study their extreme "human-ness"; ponder over their choice of adjectives; observe the simplicity of their sentence structure; chuckle over their humor. Then sit down and write not of the Lady of Devil's Head or of the dog that was bitten by a man, but about the strange and wonderful things that are part of your daily life. And when the first article comes back from the editor of the Saturday Evening Post, as it most assuredly will, sit down and write another one for the editor of some lumber trade journal, farmer's magazine, or other publication that has one subscriber to the S.E.P's thousand.

There is no royal road to successful publicity. The only way is through persistent and critical writing, talking, and thinking. But if you stay with it and finally win for yourself an audience, however small, you will be able to serve the great cause of forestry a dozen times more effectively than if you confine yourself strictly to putting out fires, or figuring out wilting coefficients in a nursery bed.

Ranger Bill Says:

A genius ain't a bad feller to have 'round if you've got a plodder to do the work.

I sure admire the nerve of them 1300 odd students that's takin' up forestry for a professun.

A stick in time saves nine, said my wife lookin' at the empty wood box.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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THE UNITED STATES AN "ALSO RAN"

The Encyclopaedia Britannica lists the United States of America as an "also ran" among the countries of the world in the matter of forest conservation and development. It will be food for thought, perhaps a little chastening, to prideful Americans to learn that we are far behind Germany, France, Austria, Denmark, Belgium, Switzerland, British India, South Africa, Ceylon, the Malay states, and Japan in this essential development of civilization and progress.

In a feature of governmental protection of the present and future of its peoples and their resources, which has been recognized and made operative for more than 1,000 years abroad, the United States has been so backward that four-fifths of our original stand of timber has been destroyed, and we are using up the remainder four times as fast as we are growing new supplies.

Zurich, Switzerland, recognized the danger of such devastation as early as 853, when the city took over the famous Sihl forest presented to Hildegard, Abbess of Zurich, by her father, King Ludwig of France. The city has owned and operated the forest over 1,000 years and has it to-day in as fine condition as ever after cutting a yearly crop of timber for more than ten centuries. France recognized it in 1346, when a law was passed requiring every forest owner to keep constantly a body of timber growing on the land. It has continued the recognition ever since with constant improvement in the laws for forest conservation. Germany has recognized it for generations, as evidenced by the wonderful conservation and reforestation in the Black forest, the Odenwald, the Spessart, and other great tracts of timber.

Yet the United States, which is pleased to look upon itself as the most advanced country in the world, did not even know there was a problem until the Roosevelt administration, and had done virtually nothing to protect its forests or its future until 1911, and then by no means enough.--Chicago Tribune.

Why We Believe in Publicity

By R. D. Forbes, Southern Exp. Station

The Southern Forest Experiment Station is concerned with the forests of a portion of the United States in which scarcely a tenth of one per cent of forest lands is nationally owned. If in the course of our investigations we discover facts of value to the practice of forestry, it is not sufficient for us to state our conclusions to Washington or announce them in the pages of the Experiment Station Record, the Journal of Forestry, or some other technical medium. Because the Forest Service has absolute control of 150 million acres of forest land in the West, there has never been any question that the conclusions of the western experiment stations would be applied at once. Not so in the South. In this region, where there is little public control of forest lands, our work is only half done when we have got at the scientific facts in any case, for we must also persuade the private owner of forest lands that what we have discovered is worth while and should be applied upon his land, and long before we can do this, we must educate him along broad lines to the point of considering Forestry as something worth while.

To meet (1), lack of plan-wise policy of inspection, D-3 has adopted for District men an inspection control plan that will in the future really regulate inspection by offices. One of the principal features of this plan is the construction of the inspection program on a longer than one-year basis involving the maintenance of a detailed tabular record of inspections by years. Another feature is closer coordination among offices. Others are the elimination to a large extent of the short trip with its undue duplication of travel and resultant waste of time and money, and revival of so-called "general inspection" by qualified officers.

To meet (2), the tendency of D-3 inspection to deal in conclusions often to the exclusion of detailed statements of facts on which conclusions have been based; we are discarding all outstanding inspection outlines and are adopting for much of our work tabular forms that list the elemental factors entering into the question of satisfactoriness for this or that activity. ********Reliance will still have to be placed on old style subjective headings for more general observations, particularly those bearing on needed changes of Forest plans, policies, generally accepted practices, etc.

To meet (3), ********* we are in the first place building on the selection of men with actual experience as Supervisors for our general inspection work. This basic training will be supplemented by a course of study in the District Office beginning early in December which we have termed our "School of Inspection." At this so-called school, each office will have ample opportunity to explain for various lines of work and various activities what its objectives are, the kind of information desired from inspectors, how to get it, the most practical form of submission, etc. **************

To meet (4), ********** each Ranger District inspection is being covered by a complete report, one copy of which goes to a centralized inspection file and each report is being supported by a notebook digest of points for later inspectors to follow up. *********** (The follow-up feature of inspection work is being secured by Supervisors through the preparation of summarized memoranda of their own inspection for review from time to time.)

Underlying and coloring the D-3 inspection system is the thought that the officer inspected is less desirous of receiving criticisms on a particular line of his work than a composite appraisal of his whole administration, even though, as happens in most general inspections, one line is especially featured. Since the value of inspection depends largely on the reaction of the officer inspected, D-3 is striving for inspections that will project criticisms of particular things against a background of conditions as a whole - a method calculated to preserve the inspector's sense of perspective and to respect the Supervisor's or Ranger's conception of fair play. Hence the real desirability of general inspections for which there are many additional arguments. *************

Through our inspection work D-3 is striving to instruct officers of all grades to arouse in the entire personnel a feeling of personal individual responsibility for satisfactoriness of service. **************

One important factor in this field is business efficiency in the sense of the best use of available resources in time, men, and money under outstanding allotments and the incidental opportunities afforded for securing results through potential cooperative agencies. Are Supervisors fully alive to the fact that "time is money" and is use of Ranger and Supervisor time so applied to reduce wastage to a practical minimum? This matter of use of time is vital. Time enters into every phase of Forest work and much of it is wasted. There is need for technical instruction for various activities, and this has been recognized, but the actual direction of the use of time by subordinates is of even more basic importance. ***************

Applied to fire, D-3's conclusions are that only through thorough-going inspection of the details as well as the larger phases of fire administration can satisfactory accomplishment be expected on the ground. Inspection from the District Office must go in the utmost detail into all phases of the fire plan, the Supervisor's local provision for inspection and direction of his

Lumberman E. C. Erickson - An Appreciation

By Fred Ames, D-6

Lumberman E. C. Erickson died at the home of his daughters in St. Paul on January 21.

Mr. Erickson had from boyhood been a logger and scaler in the forests of the Lake States prior to coming to the Northwest in 1909, when he took the position of check scaler in District 6. During the subsequent years Mr. Erickson has been a periodical visitor on the timber sale Forests from the Crater to the Tongass. The older scalers have welcomed him as friend and advisor, the new men have recognized in him an instructor who was a master of his work. All were certain of justice whether it involved praise or criticism.

Mr. Erickson was an expert in his profession. With a knowledge of timber acquired by years of scaling in the white pine region, he came to the Service during its formative period and his rugged, practical personality has been a source of strength to the timber sales organization in the field and District Office. No better tribute to his ability could be asked than the confidence which the purchasers had in him. Not once has any question ever been raised by an operator as to Mr. Erickson's knowledge of his work. His very appearance inspired their confidence and his experience was usually so far greater than their own that his decisions were accepted as the last word.

Mr. Erickson was a picturesque figure--one of a type fast disappearing. Growing up in the woods in the romantic days of lumbering in the Lake States he clung to the traditions and customs of the old time woodsman. He was a real "old timer," without frills or veneer, simple, kindly and genial, a homely character and honored as such. The memory of "Daddy" Erickson will live a long time in the hearts of his many friends.

MATHER FIELD CONFERENCE IDEAS

Inspection and Follow-up With Particular Reference to Fire Protection

By F. C. W. Pooler, D-3

In D-3, with our long field season, we have for years done a great deal of field supervision and inspection work, and accordingly it has been something of a shock to us to realize at this date that our inspection along certain lines, notably fire, has through lack of thoroughness fallen way short of accomplishing its purpose. ********** Too much reliance has been placed on outstanding written or verbal instruction - too much taken for granted in all quarters. Percentage of time applied to inspection or supervision has been unduly emphasized as against quality. Broadly speaking, D-3 inspection failures can be attributed to the following:

(1) Lack of a definite inspection control by which is meant lack of a coordinated inspection plan that determines well in advance what inspection shall be done, when and by whom. (Applies with less force to the Supervisor.)

(2) Lack of thorough-going analyses of what constitutes satisfactory performance. For want of this, inspectors have dealt in conclusions rather than in statements of fact that in themselves unanswerably spot mistakes of method or execution. This involves standards and inspection outlines

(3) Lack of fuller information by inspecting officers on subjects outside their own immediate line, resulting in inspections narrowed to the inspector's specialty and in loss of perspective.

(4) Lack of a readily available inspection record and of effective follow-up.

personnel, the compliance of all with certain standards of performance now being framed or already in effect. Inspection from the Supervisor's office must insure compliance with outstanding instructions and efficient service by the Forest personnel.

All Advertising in U. S. Forests To Come Down

San Francisco, Jan. 27.--(By the Associated Press).--Advertising signs in the 17 national forests of California must come down under an order issued at the district forester's office here to-day, while advertisements painted on rocks and trees are to be effaced. Forest service rules prohibit such advertisements without special permits, which are seldom issued, it was explained.

No, It Is Not True

By Raphael Zon, Washington

For a number of years big business has been conducting a campaign to discredit government activities, especially in the economic field. Its purpose was to head off extension of government functions in the control of public utilities. About the same arguments were and are being used as those published in the Efficiency Magazine of London. It would be a mistake to close our eyes to the weaknesses prevailing in many governmental activities, but let us, however, clearly understand what kind of "efficiency" we are talking about, and the objectives of private industry and public functions.

After the return of the railroads to private control, the country was flooded with propaganda to show how railroad management broke down and railroad property deteriorated while under government supervision. It is only now, and not very prominently at that, that the real truth is coming out. After complete collapse of private management under the strain of war requirements, the government took over the broken down transportation system and put new life into it. It raised the efficiency of labor 25 per cent, and handled more traffic and that more effectively than ever before. Since the return of the railroads to private management, the cost to the public of running them has increased 32 per cent. This is testified to by Mr. Hines, himself a railroad president, and by presidents of other big railroads.

If the objective of industry is large profits, government supervision may be a failure. If the objective is high public service and general increase in the welfare of the people, government supervision, if decently administered, is invariably a success.

The Forest Service, even granting that it is far from perfect, provides a striking contrast to the privately conducted lumber industry in their common field of activity. The National Forests came under active Government management in 1905. During the short period of 17 years, the Forest Service has built up an effective fire protective organization which in normal years makes safe a vast timber property from serious devastation by fire. It has undertaken the development of the resources of timber and range, on terms fair both to the large and to the small operator, without depleting the resource, has brought into productivity thousands of acres of otherwise waste land, and if we disregard costs which are not strictly chargeable to management, has practically paid for itself. It protected the vast property entrusted to it by the people, improved it, and helped to build upon a permanent basis, local communities dependent on the forests. It has served the people and has served well.

Without going too far back, what did the management of private forests accomplish during the same time? After depleting its basic resource and leaving in its wake a waste in the Lake States, it is stripping the South of its remaining virgin timber. Axe and fire in private forests are creating deserts, where on National Forests young timber is growing. It is true that in this process some timber owners have accumulated vast fortunes, but the majority can not claim, for all the devastation, anything beyond a bare existence. Towns, once prosperous, with the disappearance of the industry passed out of existence. Industries dependent upon wood have either moved or find great difficulty in securing raw material. The local people have suffered, the nation is a loser, - who is the gainer, and where is the efficiency?

District 6 Almost Gets First Prize

By Roy Headley

The fire record for '19, '20, and '21 given below shows that the greatest reduction in per cent of C's occurred in District 6. The fire suppression and emergency patrol cost record is also most creditable for District 6, although striking reductions have been made by Districts 4 and 1. But when it comes to reduction of area burned both Districts 4 and 1 are ahead of District 6.

Districts 3 and 7 can plead in extenuation of their records that they have had exceptionally bad seasons to deal with.

The District 2 record holds pretty steady, but the acreage and number of fires are going up. That's sure bad.

District 5 had nearly all its trouble in the watershed forests of the South. Its record in the timbered Forests would be hard to beat.

	Total Number of Fires			Per cent of C Fires		
	1919	1920	1921	1919	1920	1921
D-1	2,258	1,716	1,336	27%	10%	14%
2	346	325	415	29	15	21
3	404	426	434	10	18	16
4	704	404	439	26	12	10
5	1,108	1,338	1,196	30	25	23
6	1,591	1,365	1,311	27	18	8
7	389	484	702	66	68	76
8			18			11
	6,800	6,078	5,851	29	20	22

SUPPRESSION COSTS AND EMERGENCY PATROL

	1919	1920	1921
D-1	$2,157,516	$500,557	$222,043
2	51,268	8,084	17,351
3	6,174	22,879	37,373
4	290,979	42,026	12,040
5	203,973	159,535	137,264
6	323,971	170,495	63,777
7	5,734	7,907	21,800
8			458
	$3,039,615	$911,483	$512,106

AREA OF NATIONAL FOREST LAND BURNED OVER (ACRES)

	1919	1920	1921
D-1	1,329,277	47,068	22,922
2	31,605	5,290	35,733
3	6,227	12,894	18,244
4	192,388	13,235	5,670
5	207,423	129,798	122,612
6	199,728	70,437	30,604
7	39,876	63,471	139,603
8			820
	2,007,034	342,193	376,208

WASHINGTON NOTES

The Canadian Forestry Branch issues fire warnings in 16 different languages and dialects. One of these is an Indian syllabic script, invented by a missionary, and used all over northern Canada by the Indians.

Washington Office Barely Misses Winning a New Home: A large building located a block south of the Interior Department Building was recently vacated by the army which had occupied it since its erection. The building was advertised for lease by the owner and it looked for a time as though this building would be the long desired improvement over the old Atlantic Building. Conferences were held and inspections made. After certain preliminaries had been gone through with, a trial distribution of space was made which showed that it would be such a tight fit to get the Forest Service into the new building that the move would not be worth while, particularly in view of the heavy cost of moving and the lack of available funds for such an expense.

National Forest Receipts for the period July 1 to December 31, 1921, totaled $2,604,526, an increase of $1,359,078 over the net total for the same period in 1920. Grazing, due to payment of deferred fees, shows a total increase of $1,555,161, and Timber Sales a decrease of $187,238. All Districts except D-7 show increases, ranging from $21,312 for D-8 to $459,030 for D-4.

Location of Trucks: The following tabulation shows trucks in use by the Forest Service, January 1922.

Dist.	Exclusively on Roads Work	On Mixed Roads & Other Work	On Work other than Roads	Total
1	8	24	10	42
2	5	6	6	17
3	11	8	3	22
4		6	2	8
5	9	11	16	36
6	12	17	30	59
7	3	4	3	10
8				
Total	48	76	70	194

Forest Assistant R. M. Brown, of the Section of Computing, left Washington January 23 for New Orleans where, after getting in touch with the Southern Forest Experiment Station, he will be in the field to help in the collection of the plot measurements for the study of growth of southern pines in cooperation with the National Research Council and various State organizations.

Forest Fires in Europe: "In the Kuhkopf district of the Coblenz municipal forest, fires on July 10 and 11 (1921) burned 1 ha. of young oak, 2.8 ha. pine reproduction, 0.5 ha. pine over 40 years old, 8.9 ha. spruce reproduction, 0.5 ha. mixed forest under 40 years and 1 ha. over 40 years. About 150 cubic meters of pine logs and 20 steres of pine firewood were also burned. The fire was due partly to carelessness and partly to maliciousness. On July 10 two fires started, and on the 11th three, almost simultaneously. The fires were extinguished by the forest officers and woodcutters with the help of a party of Coblenz firemen and American soldiers. Damage was about 50,000 marks, covered by insurance."--(From Deutsche Forstzeitung, August 14, 1921).

James E. Scott, in charge of Public Relations, District 4, is in Washington on detail.

FOREST PRODUCTS LABORATORY

Why Not Wood as a Currency Standard? Wood has not occurred to many of us as a substitute for gold, but a Swiss newspaper insists with logic that in many countries the substitution has been made. The Swiss journal remarks, "In most European countries the paper currency is now based not upon gold but upon wood. The wood is changed by busy hands into paper, from which beautifully colored bank notes are manufactured. Gaudy certificates, bearing many ciphers, are the money of to-day which is being turned out in floods."

When one recalls the vast forest resources of Russia, he may begin to wonder how far upward the trillions of Russian paper money already issued may mount. Some financier should suggest to printing-press governments the superior advantages of old-fashioned American wampum over wood shavings as a handy medium of exchange.

Lefax: that popular little book of loose leaf facts for engineers and others, has just added a new sheet of data to its list - "Proper construction of crate corners - methods of nailing and bolting." The basis of this sheet was a recent very popular technical note from the Laboratory.

FOREST EXPERIMENT STATIONS

At the Forest Experiment Stations, Too: The Forest Products Laboratory is not alone in its use of the metric system, for at the forest experiment stations it is often convenient to use the English and metric systems of measurement side by side. We do not tally nor record d.b.h. in centimeters nor heights in meters, but for precise measurements of the growth of young shoots or for seedling root lengths we are just as apt to use centimeters as inches. Note, however, that in ordinary forest measurements it is customary to divide the inch into ten parts rather than eight or sixteen. Similarly, the inch is often discarded for tenths of a foot. This does not, however, commit us against the use of the Gunter's chain, and we cheerfully make calculations in acres as readily as in any other unit. Frequently Fahrenheit and Centigrade thermometers will be used side by side, perhaps, in emergency, even on the same psychrometer. Weights, even up to twenty-five or thirty pounds, are customarily made in grams, minute measurements in microns, of course.

It all sounds very confused, but when analyzed will be seen to be dictated chiefly by convenience in the manipulations, in the calculations, in recording the results or in comparing them with the work of other investigators, or occasionally by the limitations of the available equipment. In practice it is no more difficult nor illogical than the alternate use of English and Spanish, for instance, according to the demands of the occasion.--F.W.Haasis.

A Generous Offer: A news item in an Asheville (N.C.) paper, referring to the plans of the Appalachian Experiment Station to use the old plantations of the former Biltmore Estate as permanent sample plots, has brought an interesting letter from Dr. C. A. Schenck, formerly head of the Biltmore Forest School, now in Germany and writing from Lindenfels.

Most of the original records of these plantations are apparently lost. Suspecting this loss, Dr. Schenck generously offers to place his original field notes at the disposal of the Forest Service.

DISTRICT 1 - NORTHERN DISTRICT

Working Plans in District 1: Encouraging progress is being made in the preparation of working plans for those working circles in the District where plans are most urgently needed. The plan for five working circles in the Sioux Division of the Custer Forest has been sent to the Forester for approval. The plan has actually been in effect for nearly two years. The working plan for the entire Coeur d'Alene Forest has progressed to an extent of completing the computation of yield, - the big job now being the cutting plan for the next 10 to 15 years. The Forest is now working on this and may complete the plan this winter.

The plan for the Little Rockies Division of the Jefferson Forest has been completed and submitted to the District Office for review and approval. Timber surveys have been completed for the Fortine Working Circle on the Blackfeet and the Priest River Working Circle on the Kaniksu. The Pend Oreille Forest proposes to complete the working plan for the Moyie Working Circle this winter.--E.K.

Progress of Entry Surveys: During the 1921 field season the equivalent of three crews were engaged in entry surveys for a period averaging six and one-half months each.

So far as can be foreseen at this time, this work is rapidly drawing to a close in District 1. On several forests the work is now practically completed.

Up to date, approximately 1200 June 11 claims have been surveyed by this office, and approximately 220 remain to be surveyed in the next few years. Besides the claims requiring survey, several hundred have been listed and patented by legal subdivision.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

District 2 Fire Notes: To be better fortified in the future for preventing fires and that corrective measures may be applied to strengthen weak spots in the organization, a detailed analysis of the past season's work has been made in a circular to Supervisors. Some of the outstanding features may be of enough general interest to warrant mention.

The average number of fires per year for the past five years is 387, of which 24 per cent have been Class C fires. In 1921 415 fires occurred, of which 21 per cent were Class C. While the increased number of fires can be easily accounted for considering the weather record for the year, there is a good indication that this number can be materially reduced even in a similar year through more intensive effort in educational work and in arranging for more direct snappy action on the part of settlers and users of the Forests in specific instances.

Of the 415 fires which occurred, 38 were extinguished before they reached the Forest boundaries and 18 which originated outside did cross the boundaries. A considerable per cent of the 89 Class C fires for the year were of this character. The average cost, including Ranger and Guard labor, for a five-year period is $23,905; this year it was $17,351. Damage the past year was $10,930, against an average of $33,107. National Forest land burned averages 24,948 acres for the five-year period, while the records for the past year indicate an acreage of 35,734, including over 26,000 acres of grass land on the Nebraska, where no timber was burned.

Following the lead of other Districts in fire law enforcement, D-2 planned an aggressive campaign in 1921. Thirty-five per cent of a total of 359 man-caused fires have been prosecuted or settled, involving a total collection of $2291.10 from offenders. Two cases against the Denver & Salt Lake Railroad and one against a citizen of Minnesota are in the Solicitor's office in Washington, involving a total of about $300. In addition to the above, claims have been presented the officials of the Denver & Rio Grande Railroad for settlement on 55 fires which occurred in southwestern Colorado. Indications are that these claims will be paid shortly without court action. There are several other cases pending where court action has not yet been resorted to and the results can not be foretold. This represents the initial start in a consistent "Tell it to the Judge" campaign. Whatever misgivings may have existed in the minds of some Forest officers regarding how the public would look upon our efforts along this line have been dispelled. They are for it.

The fire record for the year is not worse because of the exceptional good work on the part of many individual Forest officers. On the other hand, it could be better if preventable mistakes and failures had been eliminated. These we confidently expect to become less and less as we benefit from past experience.

"The woods were made for the hunters of dreams,
The brooks for the fishers of song;
To the hunters who hunt for the gunless game
The streams and the woods belong.
There are thoughts that moan from the soul of a pine,
And thoughts in the flower bell curled;
And the thoughts that are blown with the scent of the fern
Are as new and as old as the world."
--Sam Walter Foss.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Supervisor, Commercial Club President: Supervisor Loveridge of the Carson was recently honored by being elected to the presidency of the Taos County Commercial Club, while the secretaryship of the organization fell to Chief Clerk Martinez. Forestry ideas are not likely to be overlooked in Taos County.

Tonto Recreation: The Universal Educational Tours Company, which is behind several public camping projects in Colorado and Arizona, has selected Lanham Point near Government Hill on Lake Roosevelt and hopes to begin work at once putting in cottages for rent, a public camp ground with facilities, including a pavilion, store, boats and a bathing beach, at an expenditure of upwards of $20,000. It is also announced that Globe and Miami, under the leadership of the proprietor of the Dominion Hotel of Globe contemplate developing a resort with club house, restaurant, cottages and amusement features at Grapevine, which is the most attractive bit of shade on the shores of Lake Roosevelt about 20 miles from Globe. The Century Club of Phoenix has purchased 30 acres in the Sierra Anchas on the Tonto to establish quarters for the Business Women's Club of Arizona and an additional summer resort will be located by Phoenix parties on private land on Workman Creek. The recreational possibilities of the Tonto are taking the prominence they deserve.

The Lincoln Leaven: The Lincoln Bulletin has discovered a germ that is working to good advantage among the stockmen. It is a slogan that is being passed from one to another. It runs like this, "Keep the fire off your range or the Forest Service will put on sufficient stock to keep the fire danger down." The author of the slogan is not known, but the Lincoln is gratified to notice that the yeast seems to be working fine.

Fred Miller Transferred to New Orleans: Forest Assistant Fred H. Miller, who has been engaged in woodland and other management studies in Arizona and New Mexico, has been transferred to the Southern Forest Experiment Station with headquarters at New Orleans, where he will do general investigative work in the southern pine region. He will leave the District about February 1, and the very best wishes of his many friends go with him.

First Announcement of Fire Results: The annual fire report for 1921 shows that Arizona had two-thirds of the 434 fires in the District and that there were more man-caused fires in each of the two States in 1921 than in 1920. In Arizona the increase was small, being only 10 per cent, while in New Mexico there was an increase of 140 per cent. Over one-half of the man-caused fires were due to campers and smokers. How about a little well-directed publicity at the beginning of the fire season instead of so much back-breaking fire fighting later on?

Hill Goes to D-5: Grazing Examiner Robert R. Hill, who has been in charge of the Santa Rita Range Reserve for the past two years has been transferred to San Francisco and will fill the assignment of Assistant Chief of Grazing in D-5. The earnest good wishes of the District go with Mr. Hill.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Applications for Guard Positions: This office has been in receipt lately of two applications for positions which are rather peculiar in character.

One promising young lady has applied for a position as lady lookout at one of our lookout stations and she states emphatically that she is not at all susceptible to the loneliness of mountain life and we assumed, therefore, that it would not do to send her on District 6, since she would probably be pestered with the company of Ranger Rafferty.

The other aspirant is a Pennsylvania lad who wishes a position on the Weiser Forest as Guardian.

We realize that most of the members of the Weiser personnel while away from their official headquarters probably need a guardian; however, it is not likely that this gentleman would possess the qualifications necessary to fill a position with this responsibility.--Weiser.

Woods Returns from Reno: Assistant District Forester Woods recently returned from Reno, Nevada, where in company with Supervisor Favre of the Humboldt he attended the third annual conference of the Nevada Land and Livestock Association. This is apparently one of the strongest of the State Livestock Associations. The meeting was well attended and a good program was carried out. Several matters of considerable interest to the Forest Service were discussed and resolutions formulated thereon. The association was unanimous against transferring the Forest Service away from the Agriculture Department and also expressed itself as opposed to the creation of National Parks out of National Forests. Several other matters relative to the Forest Service were included in the resolutions, including some changes in the grazing regulations and instructions.

A Good Idea: All of the Rangers on the Manti Forest have prepared and are furnishing their local papers a brief statement covering the work on their respective districts during the past calendar year. The statements cover in a newsy way the things these Rangers have accomplished on their Districts, and it is certain that the local people in that region will appreciate having this information placed before them in this form.

President Signs Proclamation: Word has been received that President Harding has signed the proclamation creating the Lehmann Cave a National Monument on January 24. The monument, which involves an area of less than a section, lies on the Nevada National Forest.

DISTRICT 5 - CALIFORNIA DISTRICT

A Strange Thing! Assistant to the Solicitor Dechant is not so well known as we thought him to be, or else the Department of Agriculture has lost track of him, as evidenced by the following which was in a letter addressed to Mr. Dechant:

"Dear Sir: The Forest Service is anxious to obtain from you and other residents of the timbered rural sections of the Southern and Mississippi Valley States definite information as to the number of forest fires that occurred during 1921."

Mr. Dechant is with us in the life, but his spirit may be wandering around the rural sections of the Mississippi Valley.

Personnel Changes: Announcement is made of the transfer of Forest Supervisor W. A. Huestis from the Klamath National Forest to the District Forester's office in San Francisco about April 1, to assist in handling the large increase in minor road and trail work incident to the new Federal road legislation. He will be succeeded by W. M. Maule, now Supervisor of the Mono National Forest. Deputy Supervisor T. C. West of the Lassen Forest will take charge of the Mono. Deputy Supervisor B. H. Mace of the California Forest is being assigned as Supervisor of the Trinity Forest. C. E. Jordan will take charge of the Santa Barbara National Forest as Supervisor. T. W. Sloan, who has been in charge of this Forest for about two years, goes to Pasadena, on the Angeles National Forest.

"The Fire Eater" released by the Universal Film Company was taken at Big Creek and Huntington Lake on the Sierra National Forest. It is from the story "The Badge of Fighting Hearts" from the Red Book and was written from a story told by Dr. Sears to the author.--Benedict.

Angeles Still in the Lead: On December 31, 1921, the Angeles had 2,205 special use permits in effect. 1810 of this number, or 82 per cent, were recreation permits, of which 1639 were summer residences, 153 hotels and resorts, and the other 18 were scattering recreational uses.

During the calendar year the Angeles issued 662 permits, a larger special use business than many Forests handle in a decade.

"Roughneck Pioneers": The February number of Sunset contains a story "Roughneck Pioneers," which describes in a most vivid and interesting manner the trials and experiences of the pioneer field officers of the Forest Service. It brings back pleasant memories to those who were with the Service in the early days. The author is Ray Palmer Tracy, a Forest Officer in D-6.

DISTRICT 6 - NORTH PACIFIC DISTRICT

"The Call of the Wild": Supervisor Allen of the Rainier has received an application for a grazing permit for buffalo, Supervisor Gardner of the Tongass, an application to graze reindeer, and the District Office an informal application for a turkey permit!

Everybody's Doing It: The meeting of the Standardization Committee of the Western Forestry and Conservation Association in Portland on January 30-31, brought together foresters (Federal and State), and fire protection organizations, and was productive of much standardization. Among those present were State Foresters of Oregon, Washington, California, and Montana, District Foresters of Districts 1, 5, and 6, and two representatives of the British Columbian Forest Service.

The Riley Lectures: Frank Branch Riley started on his 1922 lecture tour on January 21. His lecture, "The Lure of the Great Northwest," has been delivered heretofore in many cities of the eastern and middle western States. His lecture is illustrated with a special set of lantern slides, among which are a very large number of National Forest views, and the Forests and the Forest Ranger occupy considerable space; it is almost a Forest Service illustrated lecture. His 1922 tour will take in all important cities east of the "Big Muddy."--J.D.G.

Ranger McCullough Retires: The first case in this District of a forest officer being granted an annuity under the Retirement Act has recently been approved by the Commissioner of Pensions. It is that of Ranger Wm. A. McCullough of the Nisqually District on the Rainier who retires, effective July 24, 1921, after over 18 years of continuous service. The basis of approval of Mr. McCullough's application was "total disability for useful and efficient service."

DISTRICT 7 - EASTERN DISTRICT

"Even Unto the Least of These": On Sunday, Jan. 8th, 3 teams and 25 men headed by O. S. Emery and Levi Henry went onto a designated lot on the White Mountain National Forest and cut and hauled 15 cords to the home of George Glines. Mr. Glines, an old railroad engineer, is unable to work, being almost totally blind. He was taken completely by surprise and quite overcome by the gift.

On Sunday, Jan. 15th, 6 teams and 39 men headed by R. B. Morse and Ed. Sinclair, cut on the Forest about 16 cords and delivered it to Mrs. Eliz. Mead, a widow with 3 small children. She also was completely surprised.

The donors in both instances do not consider their job finished until the wood is sawed and fitted for stove or furnace.

When it is borne in mind that the boys chipped in and bought the stumpage, cut the wood, and the teams, etc., were contributed gratis, it appears a handsome thing for a small town like Bartlett to do.--Chas.E.Beals, Jr.

Chinquapins: A great many of us have from time to time hunted chinquapins in the fall in those bracing days when the leaves were beginning to turn and the frost was approaching the pumpkin. It is very much doubted, however, whether there are many foresters who realize that in certain regions the chinquapin (Castanea pumila), which in the Atlantic seaboard States ordinarily only attains brush dimensions, actually becomes of merchantable size.

Supervisor Vaughn, of the Ozark National Forest, recently purchased thirty chinquapin telephone poles 18 feet long and 4 inches in diameter. It is even worse than this because I have personally seen in Arkansas a chinquapin tree with a d.b.h. of over 24 inches.--H.O.S.

Service Bulletin

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MAMMOTH TIMBER SALE ON LASSEN FOREST

by
T. D. Woodbury, D-5

In the near future one of the largest bodies of timber ever offered for sale by the Forest Service will be advertised. This comprises 994,000 M feet B.M., consisting of 708,000 M ft. of yellow and Jeffrey pine, 17,000 M ft. of sugar pine, 248,000 M ft. of white fir and red fir, 20,000 M ft. of incense cedar, and 500 M ft. of lodgepole pine. The timber is located in the Pine Creek logging unit, embracing about 107,000 acres in the Pine Creek block, Lassen National Forest, California.

The lowest rates that will be considered are $4.00 per M ft. for western yellow and Jeffrey pine; $4.75 per M ft. for sugar pine; $1.50 per M ft. for white fir, red fir, lodgepole pine, and incense cedar; 10¢ per cord for cordwood manufactured from limbs and tops, to be removed at the option of the purchaser, and 50¢ per M ft. for other unmerchantable timber, the removal of which is optional. A $10,000 deposit will be required with every bid. The advertisement will expire April 1, 1922, but provision will be made for extending the period for 30 days upon request from parties having legitimate interest in order to give opportunity for examining the area during a favorable climatic period.

At the minimum stumpage rates in the advertisement, the Government will receive about $3,350,000 for this stumpage. Of this sum the 25 per cent return to the counties involved, for schools and roads, will amount to about $837,500, and the 10 per cent return to the State will amount to about $335,000.

A working plan has been prepared for the working circle within which this area is located. This shows an allowable annual cut, on a sustained yield basis, of about 30 million feet. The contract will provide that all timber must be cut and removed not later than December 31, 1953, and that not less than 25 million feet nor more than 50 million feet shall be cut each year. The remaining salable timber in the working circle, amounting to about 1 billion feet B.M., will not be offered for sale during the above cutting period, and when sold the cut will be restricted to a sustained yield basis.

The northeastern portion of the area bears an old, deteriorating stand of timber, and the operator will be required to extend his logging railroad into this area and commence cutting within 6 years. When cutting commences in this portion of the area, at least one-half of the annual cut must be derived from it. This is the only attempt that will be made in the contract to regulate the cutting by area for silvicultural reasons. The remainder of the timber is all in about the same condition of thrift.

"The Old Order Changeth"

By Smith Riley, Washington

A hearing has just been held before the House of Representatives Committee on Agriculture of the Bill No. 5323, known as the Public Shooting Ground Bill. This bill provides a Federal license of $1.00 to raise a fund to administer the migratory bird act and to purchase lands important as breeding, feeding, rest and use areas for these water fowl. The licenses are to be sold at the post offices and the administration of the areas is to be in the Department of Agriculture. It was stimulating to see how fully the majority of the members of the committee appreciated the conditions making the passage of this legislation necessary. Little opposition was voiced aside from the resolution passed by the game wardens of 8 western States at Salt Lake. When this resolution was read one of the members of the committee brought out the fact that this resolution could hardly be considered as voicing opposition, as it commended the enforcement of the migratory bird law and accepted the operations of the Federal government within the States to this end. Further, that the Public Shooting Ground Bill is no more than an elaboration of the Treaty Act and the migratory bird law.

Among those appearing for the bill were game wardens from eastern and middle western States, such as Pennsylvania, Virginia, Minnesota, Ohio, Kansas and Arkansas, all actively at work with well defined policies for culture and development. There was no attitude here that the State had plans to take care of the game and the Federal government should not interfere or trespass upon State rights. They urged the Federal license to raise the funds to buy these lands upon the grounds that such action was beyond the power or authority of the States. One State game commissioner said, "We of the State welcome and urge the activities of the Federal government under such a law. My State is doing much and we expect to do more, but there is room for the Federal government to do much in my State. There is a field of action for both without conflict."

MATHER FIELD CONFERENCE IDEAS

Training

By Paul P. Pitchlynn, D-5

We all agree that training is necessary. There is, therefore, no need for discussion in that direction.

There is some question, however, ***** who should first be trained - Supervisors or Rangers. There can be no question as to the desirability of training Rangers. It is so obvious that we are perhaps overlooking the necessity for giving Supervisors' deputies training. It is my feeling that if it came to a choice between the two, Supervisor should be first considered. How often have Forest officers been promoted to Supervisorships for splendid services while acting in subordinate positions and found themselves ill equipped to meet new problems and new duties, although they had within them the latent ability to properly handle their jobs as Supervisors? Have not these men been allowed pretty much to muddle through and if they found themselves the heads of the organization patted themselves on the back for making good selections, and by the same token if the men failed or made merely mediocre progress were criticized or condemned by the same selecting officers?

Many Supervisors are born executives and are by nature equipped for their positions. On the other hand, there are many who have the ability to become executives if given some training. Many can see objectives clearly, but are there not many whose vision is clouded by routine and who instead of supervising their jobs are being supervised by them?

Assuming that a school for Supervisors is desirable, the question is what Supervisors should be sent. Should first consideration be given Deputies and Supervisors who have shown weaknesses in their administration that can be corrected by training? Or should we select men whose principal lines of work are pretty much the same; for instance, train a group of Deputies and Supervisors whose work is primarily Forest Management?

As a matter of fact, do we want to pay very much attention to the everyday phase of the job? Don't we want to train these men to discern objectives more clearly and how to analyze their jobs?

I am not prepared to go into any detail as to what subjects should be taught, but do feel that the following should be included:

Plans - their preparation and application with particular reference to work and fire, and in this connection the collection and analysis of data necessary to a better understanding of a Supervisor's job and with the view of improving methods and use of time.

Principles of Organization - with particular reference to the proper relationship of the Supervisor's job to that of the Ranger.

Personnel - with particular reference to leadership and training. Important as Ranger training schools are, when all is said and done, the Supervisor is or should be the biggest factor in the proper instruction of the Ranger. It is he who knows best any deficiencies the Ranger may have. Is it, therefore, not advisable to instruct him in so far as possible in methods for instructing his men?

For Supervisors it is believed that winter would be the best time to give instruction. To properly absorb the subject matter, to digest it and finally to view it in the light of day-to-day practice, not less than one month's time should be considered. It must be remembered that in some cases men are going to find it necessary to unlearn some things in order to get the new viewpoint. This is not going to be done entirely because of the instruction given. To a large extent, it will be the contacts established with brother officers with its out-of-school discussions that will give the pupil most help.

Hoo-Hoo for Forestry

By John D. Guthrie, D-6

The Concatenated Order of Hoo-Hoo is a social organization made up of men interested in the lumber industry, and lumber journalists and foresters. The Order has a large membership in the United States, Canada and elsewhere. Most of the leading lumbermen of the country are members, E. G. Griggs of Tacoma being the newly elected head. Therefore, the following resolutions passed at the last annual meeting of the Order in Fresno, Calif., are especially noteworthy:

National Forest Policy

"Whereas, The perpetuation of the timber supply of the United States is of vital importance to the country, and

Whereas, The timber is being denuded much more rapidly than it is being grown, it is imperatively demanded that a National Forest Policy be at once inaugurated which will provide for a survey of the present timber area of the various States, and also of the denuded and idle lands, with the view of their reforestation, either by private individuals, State or national governments.

Therefore, Be It Resolved, That the Concatenated Order of Hoo-Hoo pledges its best efforts toward enlisting the cooperation of each State and the National government in securing the adoption of such policies as will ensure an adequate supply of timber for the nation's needs, and

Be It Further Resolved, That one of the most essential steps in forest conservation is protecting the young and mature timber from fires, and therefore the members of Congress should be impressed with the necessity of providing adequate funds for the Forest Service in order to reduce to the minimum the fire hazard, insect and other destructive causes. Hoo-Hoo believes that a tree saved from fire equals a tree produced.

The work of the Forest Service Laboratory at Madison, Wis., is entitled to the support of the entire industry, as its research work is of great value to the lumber users of the country, and Hoo-Hoo unqualifiedly commends its work.

Forestry Courses in Colleges and Universities

Whereas, The need for trained men in every branch of the lumber industry becomes more imperative each year, and

Whereas, A number of our higher institutions of learning are providing courses in Forestry and Logging Engineering, and are turning out some excellent men; realizing this fact, and appreciative of the value of the technically educated man in the lumber business and provision made for courses in Cost Accounting in all branches, which is a pre-essential to success in the industry.

Therefore, Be It Resolved, That Hoo-Hoo endorses the work of the forestry schools and pledges its support to their maintenance and extension, and also urges the inauguration of vocational training in the lumber industry, made possible through the Smith-Lever Act, in cooperation with the State and national governments, and

Be It Further Resolved, That carrying out the principles of helpfulness upon which Hoo-Hoo is founded, the lumber industry should assist worthy graduates of forestry schools to secure a foothold, and should help them forward and encourage them in their life work."

Christmas Trees and Silviculture

By E. S. Keithley, Pike

A considerable increase in the volume of the Christmas tree sales was experienced this year on the Pike Forest over last year, when one sale of 200 trees was made, as against six sales this season aggregating 2,000 trees. Anyone who feels that this is not a lot of trees is invited to assist in cutting them next year when it is expected considerably larger numbers will be sold as a result of the publicity given the business.

Three acres of sapling stand were cut over, which yielded the 2,000 Christmas trees, leaving an average of about 750 thrifty, well-spaced trees per acre to grow into ties and sawlogs. These 2,000 trees at 15¢ each show a gross return of $300. The total cost to the Service in Forest officers' time and expense supervising and assisting in the cutting amounted to $136.59, leaving a net return of $163.41 or $54.47 per acre. Deducting $48.12 from the cost of handling the sales proper, which has been charged to the experiment, the total net profit becomes $211.53 or $70.51 per acre. Even this figure does not represent the net return to be expected per acre, since the expense to the Service is about double what it should be with a camp on the job. Then, too, one Forest officer can supervise the cutting done by 5 to 10 men as readily as 2, as was the case this year; also daily trips from Denver to the sale area, 35 miles, with purchasers, involved much lost time on the road.

While the volume of the business was not large this year, it has been sufficient to prove beyond all doubt that the business of commercial Christmas tree logging on the Pike is economically practicable and desirable. There is much competition from privately-owned lands in the Christmas tree business. Ranchers and settlers who have little or no regard for their young stands of timber sell trees as low as 10¢ each, and allow the purchaser to cut only such trees or portions of them as are suited for Christmas purposes. Instances are common on private lands where trees 20 to 30 ft. high are topped for small Christmas trees. Isolated small trees are also invariably cut because of their usually more symmetrical crowns. Such promiscuous and destructive cutting is a curse to the region.

Approximately 7 per cent of the annual consumption of Christmas trees in Denver the past season came from the Pike Forest - the remaining 93 per cent coming from privately-owned lands. This, however, is not different from the commercial lumber situation, where perhaps not to exceed 10 per cent of the lumber produced locally comes from the Pike. As the supply of timber from private lands is being exhausted rapidly, the Forest will be the chief source of supply. The same may be said regarding Christmas trees. Next year a greater number of trees will be sold from the Forest, with a steady but certain increase each year until the control of the local situation may rest largely in the hands of the Service.

Christmas trees, as cut from the Forest lands through improvement thinnings, insure not only increased increment in trees for ties and sawlogs, but a continuous and almost inexhaustible supply of Christmas trees. I am convinced that by the time we have thinned our now accessible sapling stands of Douglas fir through the sale of Christmas trees, we can again return to these areas we are now thinning and thin from the understory of young stuff which will most certainly result from the present opening up of the sapling stands. In fact, it is not beyond probability that we may find it even desirable to manage certain small areas easily accessible largely on a Christmas tree basis with a rotation of from 20 to 40 years.

Not only is the supplying of the local demand from the Forest expected to increase materially in the next few years, but we will receive demands for large sales in lots of from 5,000 to 10,000 trees to be shipped as far east as Omaha and Kansas City. Even at this time, our first real attempt at commercial sales, prospective purchasers have inquired regarding the purchase of 10,000 trees to be shipped east. While the Pike was not fortunate in landing any of these large sales, due no doubt to competition on private lands, our "hat is in the ring," and eventually certain accessible sapling and pole stands on the Pike Forest, I venture, will take on the appearance of highly intensified forestry practice, made possible through commercial sales of Christmas trees and incidentally such sales may in time prove to be an important source of revenue. The Pike, to be made to pay from now on, must be run as a "five and ten cent counter" - as such, Christmas trees will prove good sellers.

WASHINGTON NOTES

The New Uniform: Prices received to date from manufacturers of the Service uniform indicate that Forest officers will not have to spend a half-month's salary to outfit with a new suit of forestry green. One firm, already well known to men in the field, quotes a 3-piece 16 oz. worsted suit for $29.40; serge, same weight, for $27 to $33.50, and whipcord, 16 oz. at $34.40.

Forest Inspector Paul D. Kelleter is back in Washington from a six weeks field trip, during which he attended various Supervisors' conferences in the six western Districts.

Director R. D. Forbes of the Southern Forest Experiment Station and Acting Director E. H. Frothingham of the Appalachian Forest Experiment Station were recent visitors in Washington.

FOREST PRODUCTS LABORATORY

Cigarette Snuffers: Comes a man from down in Maine who sends for our inspection several samples of a new device which he calls a "cigarette extinguisher." The machinery of this new addition to the endless order of things is quite simple, merely being a small model of an old-fashioned, cone-shaped candle snuffer. Dolled up with nickle plate and fitted with a ring for attachment to the key ring, it adds a new note to any gentleman's attire.

Mine Timber Preservation: The Section of Preservation is making especial efforts at the present time to interest mine owners throughout the country in the preservation of timber entering into their operations. Many individual owners and managers are being written specifically on this matter.

A "Pure Glue" Law Needed: Recently several naval aircraft stations sent in for testing a glue newly placed on the market and advertised as a superior glue for aircraft work. It was known as "Russian Heat Glue." The results of our standard tests on this article showed it to be the poorest glue ever examined here. A man 5,000 feet above earth depending on such a glue to hold together some essential parts of his aircraft might find himself in a most embarrassing situation.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

District Forester A. S. Peck addressed the Western Slope Livestock and Agricultural Conference, held at Montrose, Colorado, February 1 to 4. This meeting was attended by between 400 and 500 people, including a large delegation of railroad representatives, a justice of the Colorado Supreme Court, and other public officials.

Arbor Day: Steps have already been taken to make much this year of Arbor Day, as it is the 50th anniversary since its establishment. Not only protection against fire, but reforestation and the other lines of forest activities will be presented in schools, clubs, and commercial organizations.

Forest Examiner Crosby A. Hoar has been assigned as Weeks Law Inspector for Michigan, Wisconsin and Minnesota, with headquarters at Duluth, Minnesota. Mr. Hoar will be the direct representative of the District Office in handling all matters connected with Weeks Law inspections and conferences with State officials and others, and in coordinating Weeks Law work with National Forest fire protection.

Ranger Joseph A. Sweeney, late of the 20th Engineers (Forest), who has been in charge of the Morton Nursery on the Niobrara division of the Nebraska Forest, recently received word that he had been awarded vocational training at the rate of $130.00 per month. On February 1 he left the Service for Ann Arbor, Michigan, where he will take up a complete forestry course at the University of Michigan.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Tucson Exhibit: Supervisor Calkins of the Coronado had good success with his Forest Service exhibit during Farmers' Week at the University of Arizona. He has called particular attention to the publicity pamphlets that were given out, among which were "Lumber Exports and our Forests," "Timber Depletion and the Answer," "What the National Forests Mean to the Water Users," "The Loco Weed Disease," "Forestry and Farm Income," "Growing and Planting Hardwood Seedlings on the Farm." In addition, each interested person was supplied with a mimeographed copy of the six rules for fire prevention. At the close of Farmers' Week, the exhibit was moved to the Chamber of Commerce Building, where it is still telling its appealing story.

Accommodating Trespassers: They left their camp fire and also their names, Ranger Woods of the Lincoln learned from one of his per diem guards of a fire that had occurred several days before. It was presumably caused by an unextinguished camp fire. A party of campers in a truck had passed the guard's house the day before and the truck tracks led directly to the place. Ranger Woods went to the area and, in search for clues, found a horse skull with five bullet holes through it. Close examination disclosed the horrible fact that the expert but proud marksmen had inscribed their names near the respective hits. The head of the party is a Deputy Sheriff. All that remains to be told is that Ranger Wood still has a hundred per cent enforcement record for 1921.

Two Men, One Name: The Fiscal Agent says that last June his office mailed a check to one Elejo Delgado, a laborer at Jerome, Arizona. Not knowing there were two Elejo Delgados in the same vicinity, A. Morris could not, of course, specify which one should have the check, so the one who didn't do the work got it, endorsed it, and cashed it. In the course of time the rightful Elejo wanted it and asked for it. A photostat copy of the check obtained from the Treasury Department showed that the Elejo who did the work did not endorse the check and besides that he said he didn't. Secret Service men managed, however, to get the money back and Elejo the worker was issued a substitute check.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Elk on the Gros Ventre River: About 400 elk are scattered in small bunches from Horse Creek to the mouth of the Hoback Canyon. The snow in this locality is deep and calves and bulls are in poor condition. We haven't at this time a very accurate estimate of the number of elk on the Gros Ventre River. However, Ranger Coulter reports that with the exception of about 200 head in the Gros Ventre Canyon between the Forest boundary and the Horsetail Ranger Station, the elk on the Gros Ventre are in good condition. Approximately 500 elk scattered along Snake River from the mouth of Cottonwood to the mouth of Spread Creek are reported by Ranger Horel to be in fair condition.--Teton News.

Preliminary Hearing Held: Saturday morning Rangers Edgar P. Huffman and Chester Olsen were given a preliminary hearing upon the charge of setting a fire upon the California National Forest in violation of Section 52 of the penal code. C. N. Woods acted as United States Commissioner. T. V. Pearson represented the defendants and E. S. French appeared in the role of public prosecutor. The audience seemed to enjoy the proceedings and if shouts and laughter were evidence the spectators would have excelled the witnesses. For a time it looked as though the proceedings would go on indefinitely, as both attorneys had plenty of steam, but when the dinner bell rang, by common consent matters speedily came to a close with the result that Mr. Huffman was bound over for the action of the Federal Court and released upon his own recognizance, while the smiling Chester was permitted to go with the admonition to sin no more.

Visitors: Messrs. Sherman and Norcross were visitors at the office yesterday, having stopped over on their way from Reno to Salt Lake City.

DISTRICT 5 - CALIFORNIA DISTRICT

Who Says The Ranger's Job Affords No Excitement? During the recent unusual snowstorm in southern California, some of the Ranger force had a pretty strenuous job of caring for the tourists and travelers who were snowed in on their Districts.

Ranger DeLapp, of the Santa Barbara, turned the Tajon Ranger Station into a hotel and accommodated about sixty people who were snowed in on the Ridge Route. This crowd ate up all the grub and burned all the wood at the Station. By using the barn as sleeping quarters for the men, DeLapp was able to provide accommodations for the women and children in the little 5-room Station. Ranger DeLapp reports that at one time 29 snowed in automobiles were in sight from the Station.

The Cleveland also had its troubles; Rangers Snider and Miller making a 40-mile snowshoe trip into the Lagunas to locate a banker and his family who were snowed in at their special use cabin. Such a storm was so unusual that snowshoes had to be borrowed from Los Angeles before the trip could be made.

Newspaper reports from Los Angeles indicate that Angeles Rangers found the body of one man who was overwhelmed in the snow.

Hunters Kill Domestic Stock: A review of the Supervisors' annual grazing reports in this District shows that on nine Forests 65 head of cattle, 3 horses, and one sheep were shot by hunters during the last hunting season. The other eight Forests failed to report losses from this cause.

This also raises the question as to whether hunters in the State are making any distinction between bucks and does if they are not able to distinguish a buck deer from domestic stock.

Apparently there is need of requiring hunters to dress in conspicuous clothing, similar to the requirement in many other States where a large number of hunters are in the field, if human life is to be properly safeguarded.--J.V.N.

Addresses: District Forester Redington gave an illustrated address at the California Academy of Sciences on Sunday, February 5, on the work of the U. S. Forest Service.

Friday, February 10, in the Harbor Commission Lecture Room, Logging Engineer Price gave us an illustrated talk on "Logging Methods," which was both interesting and instructive.

An "Old-Timer" Resigns: The resignation of Walter F. Emerick of the Santa Barbara, effective February 28, has been received. Emerick is one of the "old-timers" in the Service, having entered as a Forest Guard on August 1, 1906, going up through the various grades and finally having been put in charge in 1920 of the Coast Division of the Santa Barbara, which covered the four western Ranger Districts. He has had broad experience in the Service and has handled such special work as Land Classification and Grazing Reconnaissance successfully, while he has also made a record on fire suppression and law enforcement work. The best wishes of the District for success and happiness go out to Mr. and Mrs. Emerick.

Ranger Bill Says:

There's one reward for good work I aint never yet failed to get - that's more work.

I've most got 'nother finger typewriter broke.

What's got into you recently goin' round all day asingin' "Only a Standards Bearer," says my wife peevish like.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Western Hardwoods for Distillation: The experimental work at the Forest Products Laboratory on determining the value of Oregon maple and Oregon alder for distillation purposes shows that both of these species compare fairly well with the eastern distillation woods, beach, birch and maple, in the yields of alcohol and acid per unit weight of wood, but since both of these western species are very light in weight, they do not compare well when on a cord basis. As the cord basis is the common one for measuring a supply of distillation woods, the western species are not so good a raw material for distillation as the common eastern species.--W.H.G.

An Expression of Appreciation by the Oregon Game Commission: At a recent meeting of the State Game Commission the following resolution was adopted:

"On motion by Commissioner Kelly, seconded by Commissioner Lynch, the State Game Warden was instructed to confer with Mr. Geo. H. Cecil, U. S. District Forester, with a view of renewing the existing contract between the Forestry Department and the Game Commission, covering cooperation in the National Forests, believing that a renewal of this agreement would tend to refresh the minds of the employees of the Forestry Department and the Game Commission, call their attention to the importance of cooperative work and cause a greater degree of cooperation to exist between the public, the Forestry Department and the Game Commission. The State Game Warden was also instructed to inform U.S. District Forester Cecil, and through him his organization, that the Game Commission are truly grateful for the spirit of cooperation on the part of the Forestry personnel and regret the inability of the Game Department's personnel to repay this service in kind."

Permanency in Range Use

By Walt. L. Dutton, Whitman

The following figures deal with the C&H permittees on the Whitman (not including the Minam division) during the period 1912 to 1921, inclusive.

During the above period 298 different individuals have held permits and grazed stock for periods varying from one to ten years. Of these 298 permittees, 64 used one year only and their average per permit was 28.4 head. Of the remaining 234 permittees, 27 used the full ten-year period, and their average per permit per season was 118.9 head. Between these two extremes the figures show a fairly uniform curve. As the period of use in years increases the average per permit increases and the number of users decreases.

For the 27 permittees who used the full ten-year period, the average per permit in 1912 was 97.7 head, and they were approved for practically everything applied for. In 1921 their average per permit was 128.3 head, but this average would have been increased by 60 head per permit had the range been available.

In 1912 there were 86 permittees grazing 6,808 head. In 1921 there were 148 permittees grazing 10,967 head. The increase in both number of users and number of stock has been a steady annual growth.

During the period under consideration the per cent of new permittees each season is rather striking. The figures show that for each season an average of 22.8 per cent of the permitted personnel did not hold a permit the year before. The minimum was 12.5 per cent in 1913 and the maximum was 36.1 per cent in 1917.

Further compilations will probably be made on other grazing Forests in this District. The effort necessary to secure the data is not prohibitive, and the results of a general study along this line might be of considerable aid in checking the soundness of some of our present grazing policies.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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DO YOU APPRECIATE YOUR OPPORTUNITY?

by

Duncan Dunning, D-5

Do Foresters appreciate the opportunities they have to establish monuments to themselves? It would tend to raise the standard of work by increasing professional pride if the name of the originator were more closely connected with work which is to represent him for many years, perhaps to bear results long after he has left the Service or even is adding his substance to the soil.

Have you ever nosed out a laborious line of field notes on a hot day "18 chains, top of ridge; 24 chains, cross ravine, etc." until the 80 were finally behind and then peered about in the brush for some sign of work done 50 years ago? If the old-timer was honest there will be his monument of stones, possibly even a weatherworn leaning post of heart cedar with scribing too faint to read. Chopping into a promising witness tree will reveal the story folded under 50 seasons of growth. You have a feeling of deep gratitude and respect. But if he was dishonest and "set it by eye" from a distance, your feelings don't bear expression!

Men are making plantations to yield their product 50 or 100 years from now. Will anyone then know who made them?

Men are marking timber sale areas, guarding against logging damage and fire. How carefully do they select the trees to leave? Some of the men go over their marking several times before felling is completed. Doubtful trees are marked or left as felling gives a better chance to judge them. Bad trees overlooked become conspicuous and are removed. In years to come the condition of these areas will be largely the results of one man's work barring uncontrollable natural agencies. Would he be more careful if he knew that his name would be continually associated with it?

Many sample plots have been established for reexamination over long periods. Thoroughness of the original layout greatly facilitates the work of those who follow. On most of these plots conditions are a credit to the originators, some of them no longer in the Service, such as Gallaher, Maddox and Dudley. They would undoubtedly be interested in results obtained from their work. A definite effort should be made to follow them up with reports.

Too often the forester never sees the culmination of his work. In some cases results are summarized by other men years after the work was initiated and little credit is given in the reports to earlier workers.

Every effort should be made to connect the worker's name with his work, both in the field and in printed records. If it is bad he will be ashamed of it. If it is good he will be proud of it. In either case better work may result.

The Tightening-up Process

By John F. Preston, Washington

Recently we have all heard more or less about the so-called tightening-up process. Such words as "standards, specifications, strict accountability, work plans, etc.," have become familiar sounds. These things are not new in the Forest Service, but the push behind them has been increased and given new impetus. Just how much occasion is there for some of the things which are being talked about, and to what extent may the cure be worse than the disease? Without a doubt some tightening up following the war was necessary. However, from what I have observed in the field, there may be some danger connected with it, and it is of this danger that I wish to treat.

I recognize that the results obtained by the Forest Service are not as good as desired. We all know that our fire protection, for example, is not as good as we would like to have, and that better results must be obtained. It is only a question of how to secure those results. Our personnel was greatly weakened during the war and the low salaries compared with the increased living costs during the period following certainly did not help the situation. I believe that a very appreciable percentage of the Ranger force are capable of handling greater responsibilities than they are now trusted with. The real need in my opinion is Forest Service training of its own men and a stronger push which will result in giving the Ranger position more importance and more responsibility. The salary question, of course, is more or less tied up with this; but once give the training and the responsibility and the salary part could be more easily adjusted.

The United States Forest Service is a name which is beginning to mean to the average citizen something more vital and human than his conception of a Government bureau. The effort of all its members through the 17 years of its existence has established a reputation for service, for efficiency and for the ability to transact business with a minimum of red tape. This is due to the ideals which have guided the organization. The whole plan has been to develop men with sufficient judgment, initiative and foresight to handle the work with a minimum of detailed instructions. In the old days the slogan of the Forest Service was "Results Count." The means by which those results were secured was of secondary importance. Numerous examples could be cited of the real men which that system developed. It was a policy of man efficiency which exalted the idea of an efficient personnel rather than a nicely coordinated machine. The past accomplishment of the Service has very largely been due to the fact that the very nature of the work and the ideals back of the organization not only encouraged but forced rapid development of its employees. The far flung nature of the Forest Service work, its isolation and difficulty of close supervision and inspection seems to demand a policy of man efficiency rather than machine efficiency, and I think that is still the ideal to which we are holding and should hold. The distinctive characteristics of the opportunities offered by the Forest Service to its personnel have been individual initiative, freedom of thought and action, a chance to help mold the policies of the organization and, with it all, freedom as a citizen to exercise some degree of moral leadership each in his own community. The whole atmosphere has been distinctly democratic. In the tightening-up process I assume that the Forest Service desires to retain a democratic organization and that the old ideal of depending upon an efficient, self reliant and independent personnel for results is still the aim of our efforts. We do not want machine made men, - we do not want men ruled from the top, but an organization guided and stimulated by capable leaders.

In the process of tightening up there has been much discussion of standards. I believe in standards for trails and roads, for marking timber, for utilization, for range management and for the numerous phases of the fire protection problem, but when it gets down to job standards where we specify in quantitative terms, exact or approximate, what a man in a particular position shall do and when it shall be done, we are getting on decidedly dangerous ground. Such standards are useful as a guide in order to help the organization reap the benefits of past experience, but we should still expect each man to use his judgment and initiative in outlining the work of each particular job. The danger is that with job standards we will use those standards as a yardstick to judge whether or not the work is being satisfactorily done. In other words, the danger is that the means to an end will be exalted to the point where it becomes the end in itself. Results are what count and they can not be obtained in the long run by any other method than the system of man efficiency. Anything which tends to kill the development of the man, which tends to enable him to handle the job in a routine way and with a less use of gray matter is tending toward the making of a machine. In this tightening up process it is important to hold tight to the ideals which have guided the organization in the past and to go no further with the development of standards than necessary to aid in the development of an efficient personnel; not to the point where men are fitted into well-oiled niches in a great machine.

Let our inspections be on the basis of results obtained, - let it be perspective, and if we look at the standards drawn up, let us be careful to view them only as useful tools and let no man get the idea that compliance with the quantitative job standards is in any way an indication of an efficient employee, or on the other hand that failure to comply with such specifications is in even a minor degree a necessary indication that he has failed to render satisfactory service.

Contributions Invited for Official Record

The Secretary has asked me to call the attention of the field officers in the Forest Service to the letter in the March 1 number of the OFFICIAL RECORD, inviting contributions from members of the staff of the Department located in the field. I hope that you will bear this request in mind, and when material that seems to you to be suited to the requirements of the Record comes to your attention that you will write it up and send it in. You can judge the class of material the Record will use as you continue to read it and as it develops. It can not be a Departmental house organ in the best sense of the word unless it has the cooperation of the officers for whom it is intended.

Material submitted for publication in response to this request should be sent this office, marked "For Official Record," at the top of the page.-- W. B. Greeley.

Forest and Grazing Assistant Examinations

The Civil Service Commission announces a Forest Assistant examination on March 27 and 28, to be followed by the Grazing Assistant examination on March 29 and 30. The holding of one examination immediately after the other is done in order that applicants can take both examinations with the minimum of expense.

Discretion in Fire Law Enforcement

By M. M. Cheney, D-3

Tell it to the Judge! As a slogan, good! But there is need for discretion. Our zeal for law enforcement should be one of sound sense. We have a mission to perform - to educate our public to the need of care with fire in the woods. But the true psychology of education is to create an interest in the subject and get into the public mind through sympathetic understanding. Teaching the child with a birch rod is archaic. The wilful offender - the individual guilty of malicious carelessness - must be made an example of. The law is not intended to punish. It educates through example. The offender is merely the subject. With that point of view the violator of our fire laws should "tell it to the Judge" only when it will educate him or the public better than some other method. If we are overbearing and unreasonable in law enforcement, we antagonize the victim and the public sympathizes with him instead of us. Furthermore, so does the Judge, and he develops a point of view that may affect us seriously in some important case. We lose by it in the long run.

In a recent case, two young men working their way through college made a temporary camp fire on the Forest and failed to extinguish it. Numerous clues of an indefinite nature were found. One of our best and most experienced men spent eight days running down the clues and was finally successful. The boys themselves and the mother of one told straightforward stories with no attempt to conceal the facts, although they claimed they had put out their camp fire and they could not have started the forest fire. However, they were convinced and agreed to plead guilty. The County Attorney refused to prosecute under State law. The U. S. Commissioner on a plea of guilty gave them a 20-minute lecture, released them on their own recognizance and bound them over, telling the boys that they would probably get off with a light fine. The Federal Grand Jury refused to indict.

The effect of the case can only be to give the boys, their friends in college, and outside, the impression that the Service prosecuted in an improper case and could not make it stick. The members of the Grand Jury carried away a similar impression. The court officials may remember it in other cases. For intelligent people of this type, a lecture by Forest officers, friendly but firm, would have taught the lesson and left them interested friends of the Service.

If the State officials had acted, or the Grand Jury indicted, we would have a serious responsibility in the stain on the record of two citizens, a record as criminals that would follow them all the days of their life - a mighty serious thing.

In these days of many laws, a police court appearance for violation of municipal traffic regulations is so common that it does not carry any serious odium, but a prosecution in the United States courts for violation of Federal law is not so trivial. It is a court of record, and business houses, bonding companies and the courts themselves do not overlook such a record! Nor does the Civil Service! In the application for examination they ask whether the applicant has ever been charged with any "crime, misdemeanor or any offense whatever," and require an abstract of the court proceedings, and in case of fine or conviction a statement from the judge or other court officers as to the circumstances and applicants' reputation. To place such a burden on the future of two college boys guilty only of unintentional carelessness is a step to be taken only in absolute necessity for the general welfare in a matter of great importance.

The theory that it is the province of the judge exclusively to show leniency is false. It is within the province of a prosecuting attorney to decide whether a case should be prosecuted. It is always the function of a party aggrieved, or of an attorney to show leniency if justified. There is dynamite in a policy that overlooks this fact and takes all cases to the judge.

The local officers in the cases cited merely followed established policy. Should there not be opportunity for discretion? Will we not get farther in creating a wholesome respect for the law and the Forest Service if we are on the job, but show some leniency in a proper case and avoid court proceedings where justice does not demand, or we can not expect to secure a court penalty?

D-5's Answer to Cheney's Argument

By Paul G. Redington

This District has gone through several stages of trying to educate the public to the need of care with fire in the Forests, and has found that the majority of the public will observe instructions and warnings. The minority, which is composed of the careless and wilful, disregards the regular program of education. A very small percentage of this minority will be children or those who have not reached the age of discretion and who can be expected to be careless or ignorant, especially when in an environment to which they are not accustomed. With this small percentage special methods of education are necessary.

The example given by Mr. Cheney is unfortunate. The recitation of facts shows that the case was not handled properly. In the first place, if it was desired to prosecute in a Federal court, the offense was a misdemeanor and should have been presented on information. There was no necessity for United States Commissioner or Grand Jury proceedings. In the second place, since the boys finally decided to plead guilty, the Forest officers should have been able to work out a method of impressing them with the seriousness of the offense of leaving a fire unextinguished. Two cases in California of college boys leaving fire are recalled. In one case the men were taken before a United States Commissioner, who gave them a lecture and released them on probation for a year. In the second, the United States District Attorney did the same thing. The boys were duly impressed and their education enlarged without the necessity of court proceedings and with as good results.

Mr. Cheney assumes that Law Enforcement means relentless prosecution and persecution, regardless of the nature of the offense or the offender, with no use of ordinary horse sense, and his argument is based on that assumption. On the other hand, if Law Enforcement means justice tempered with mercy, there can be no valid objection to it. The whole object of Law Enforcement is education. The wilful offender can usually be educated only by prosecution in a Federal Court through indictment. The careless one must ordinarily be tried before a justice of the peace, or in flagrant cases on information in the Federal Court. There are exceptions to all rules, but Law Enforcement is no exception to this rule. Cases arise where not only justice but discretion dictates a course of procedure varying from the ordinary. Mr. Cheney has chosen one of these exceptions to prove his case, but it does not prove his rule.

Motion Pictures and Forestry

Of late a leading motion picture trade journal has been running quarter page displays under the title "A Warning," calling upon the industry it represents to lend its support to the Snell-McCormick bill for a national forestry policy. The argument put forth was that the motion picture industry, being one of the largest in the country, would be among the first to feel a shortage of timber supply. Nor is this statement far short of the mark.

No one seems to know exactly how much lumber the hundreds of motion picture producing companies in the United States use in a year. Moreover, directors are averse to letting the public in too far on the "atmosphere of the studio," since they do not want people to become disillusioned as to the wonderful castles, cities, etc. (largely built of 2x4s) which are shown in their leading features. However, a few facts as to the amount of lumber used in "big productions" are available and may serve as an eye-opener to foresters.

D. W. Griffith in his latest picture "Orphans of the Storm" used 600,000 board feet of lumber, most of which went into building "the streets of Paris." This same director in producing "Intolerance" several years ago made use of over 1,000,000 feet of various sized small timbers. And the "Birth of a Nation" took over 400,000 B.F. The Universal Film Manufacturing Company in "Foolish Wives," produced in 1921, consumed 300,000 feet of lumber. These few illustrations are but a drop in the bucket. The motion picture industry not interested in forestry? I'll say they are!--H.

MATHER FIELD IDEAS

Control Line Patrol

By Paul A. Wohlen, Clearwater

It is safe to say that more fire line is lost through inadequate patrol than from any other single cause. This is equally true of small as well as large fires.

The object of Control Line Patrol is to hold line constructed, keep the fire inside area trenched and put the fire out.

Fire line lost means waste of money and effort, is discouraging to the crew and the men lose confidence in the foreman's ability to direct the work.

****

Just as no two fires are fought alike, though the same fundamental methods are followed, so the patrol varies on all fires, though to insure effective patrol the following points are essential.

1. Select dependable and experienced men.
2. Fix responsibility. Make every patrolman responsible for a definite part of fire line.
3. Give complete instructions and be sure they are understood.
4. Furnish sufficient tools.
5. Inspect line as often as possible to see that the work is done and that the men are on the alert.

Any foreman can build a fire line. It takes a good one to hold every foot constructed, though well constructed fire line properly located greatly reduces patrol.

As the construction of the fire line progresses, patrol men should be assigned to the completed fire trench.

In selecting patrol the most dependable and experienced men should be picked.

The fire line should be divided into stations by driving stakes or blazing trees, and the stations numbered. Each patrolman should be given a certain station in order to place responsibility should the fire get away. On a large fire it is necessary to put a man in charge of the patrol. He will see that the men are on the alert and give instructions and assistance.

The length of the stations will vary with conditions, steepness of slope, whether down hill or uphill side on fire, amount of inflammable material inside the line, wind direction and velocity.****

At night the patrol can usually be reduced and several stations assigned to each man. Often it may be entirely abandoned.

Frequent inspection of patrol is necessary, especially at night.

Impress upon the patrolmen **** that patrol does not mean to sit down and wait for fire to hit the line and burn out, but to put all fires out inside the trench. Point out to them the danger points and inform them where to get help if needed.

The patrol should be worked on regular shifts when possible. When a patrol is relieved he should inform the patrol going on duty about conditions on his station, whether any fires were started outside the line and if so, the location and condition of same.

It is important that sufficient tools be given the patrolmen. They should be furnished axe, shovel, hoe or mattock, canvas water bucket, if water is available; in addition the night patrolmen need lanterns or candles, and a "palouser." These tools need not be carried around all the time, but should be available on each station.

A fire gets away either by sparks flying across line, by snags falling and tops breaking off and rolling across line, or by the fire hitting the trench with too great force and crossing the line.

To guard against fire starting from sparks and embers, the patrol must always be wide-awake. When the wind carries the sparks across in great numbers, it will be necessary to place several men outside the fire line on certain sectors to put out the fires. On large fires that create drafts from intense heat, or on any fire where very strong winds occur, sparks will carry a long distance. Frequent trips must in that case be made to some point that covers the country in front of the fire.

All burning snags that may throw sparks across line should be felled when possible, and snags not burned should be banked with dirt (mineral soil), to keep from catching fire. Burning logs that may roll across the line should be banked.

To keep fire from hitting the trench with too great a volume of heat, unburned patches between trench and edge of fire should be burned out gradually. In addition, pits of mineral soil should be prepared to check the blaze and heat, if needed.

As the fire dies down, the crew is gradually laid off, and the patrol reduced and night patrol abandoned. During this time all burning snags within 150 to 250 yards of fire line must be cut down, all unburned patches between line and edge of fire burned out, all ground and surface fires put out within 50 yards of fire line. Areas inside the fire not burned must be made safe, especially if there is any danger of fire crowning and sweeping across a stretch only covered previously by surface or ground fire. Burning ends of logs should be cut off and buried. If water is available it should be used wherever possible, as it shortens the period of patrol.

During the last few days the foreman should make several inspections of the complete fire line to determine conditions and give definite instructions to the patrol that will remain.

On every fire there is always a combination of conditions to be met and the man in charge must analyse these conditions, take advantage of some, and take the necessary steps to offset the others and act at the right time in order to put the fire out.

When possible, a Forest officer should inspect fire before patrol is entirely called off.

FOREST PRODUCTS LABORATORY

Good Advertising for the Pine Tree Shield: Twenty-five men from the Laboratory neatly uniformed in white shirts, black bow ties and dark trousers bearing on their backs in a five-inch circle the Forest Service shield printed in green ink on a cloth background, bowled this week in the Wisconsin State Tournament. Nearly a thousand teams are in this affair, which is said to eclipse in size any previous bowling tournament including the nationals. A month is required for all the teams to take their turn on the maple speedway. A veteran bowling official characterized the five-team Laboratory group as the "cleanest-cut aggregation he had seen take the floor in any previous State tournament."

Spontaneous Combustion in Sawdust Piles: A pile of fir sawdust, in places seventy feet high at a mill in Oregon, has recently taken afire, apparently starting in the interior and breaking through finally near the top of the pile. The mill people attribute the fire to spontaneous combustion, basing this conclusion on the fact that for more than six months prior to the fire the top was steaming from apparent inside heat. The Laboratory was unable to substantiate this theory by any concrete facts obtained by observation or through laboratory experiments. The general theory of slow oxidation in the interior of the pile in connection with the poor conductivity of sawdust thereby accumulating enough heat in time to cause active combustion might support the Oregon lumberman's guess as to the cause of the fire. Field men may have observations to supplement this case and a potential forest fire danger may be involved.

DISTRICT 1 - NORTHERN DISTRICT

Record in Game Law Convictions: A review of the card records on game law violations, where offenders have been hailed into court through the efforts of Forest officers, shows 34 cases for 1921 with 33 convictions. Fines assessed in these cases amounted to more than $1,500, plus costs. The offenses range all the way from fishing without a license, in a number of which cases the fine was $25, to illegal trapping of beaver (fine $200, plus costs), and wanton destruction of game (fine $300).

This record is decidedly the best that has ever been made by the District. One very pleasing feature of the whole thing has been the high proportion of convictions, which goes to show that public opinion and the courts are backing stringent law enforcement better than ever before.

The Pend Oreille Forest leads in the number of successful cases, according to the records, with 9 scalps to its credit. Guard L. A. Smith on that Forest seems to have a nose for game law violators, since he was "in at the kill" on at least eight of the cases. The Kootenai and Missoula are tied for second place in the list of Forests with 4 convictions each. The names of several familiar Forests do not appear in the list. I wonder - do they have all the game law violators in jail?--Leon C. Hurtt.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Opposition to Public Shooting Grounds Bill: The Public Shooting Grounds Bill, advocated by the American Game Protective Association, appears to be meeting with a good deal of local opposition from the State Game Department of Colorado on the grounds that there would be interference with State rights, dissipate State authority and interfere with the prerogatives of the State Game Department. Apparently there is developing an organized opposition to the bill, although it is fully recognized that the Federal Migratory Bird Law is proving to be a most excellent thing for the protection of migratory birds. It is also recognized that States would never have taken, on their own initiative, similar legislation. The question of a Federal license fee of $1.00, provided in the bill, would probably defeat it if there were a referendum to the entire people of Colorado without some previous educational propaganda which would explain the ultimate benefits of such legislation.

A Rangers' Meeting attended by the Rangers and other Forest officers of the Battlement, Gunnison, Uncompahgre, and Montezuma Forests, was held at Grand Junction February 10 to 13, following the allotment conference with the Supervisors. A number of men from the District office were present during the meeting.

From February 20 to 23 a meeting was also held at Ft. Collins for Rangers and Forest officers from the Arapaho, Colorado, Hayden, Medicine Bow and Pike Forests, and this will complete the two-year program.

Area Planted in 1921: A total of 4,079 acres was planted in District Two in 1921 and 135 acres were seeded, making a grand total reforested of 4,214 acres. This is the largest acreage that has ever been planted, closely approaching the large area reseeded ten years ago. The best feature of the present work is the fact that whereas most of the early seeding was a failure, the areas planted now are largely successful.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Fire Instruction in New Mexico Schools: Long cherished hope is coming to realization. The last New Mexico legislature made an appropriation for publicity and education in fire prevention to be handled by the Commissioner of Insurance. As a direct result, fire prevention is now taught in the public chools of the State. The text-book used, "Safeguarding the Home Against Fire," prepared by the National Board of Fire Underwriters, covers the whole general field of fire prevention in a very complete way. Forest fire prevention, however, is just barely touched upon and it is the intention of the District office to supply material for specific instruction in this very important subject.

Did This Ever Occur to You? Some one has said that it was a brave man who first ate an oyster, but ranking close to him is the Forest Ranger who makes a little talk to a room full of school children. He probably starts by telling them a story which he thinks is funny, - in fact, he thinks it should almost make a horse laugh. After bringing the story to a very humorous finish he waits for the gale of merriment. Does he get it? Not noticeably. In fact, all the kids look scared, until finally the smallest urchin gives a nervous little giggle, which is nipped-a-borning by the big boy across the aisle, who wears high-heeled boots. He admonishes the culprit in a stage whisper easily heard outdoors "Shut up you maverick or the Ranger will earmark you."--Coronado.

One of the Wonders: Nature makes abundance share with need. On the Jemez division of the Santa Fe National Forest there is a good sized creek that drops bodily into a hole in limestone formation and, after being lost to view for more than half a mile during which it passes entirely beneath a high rocky ridge, reappears in a wholly different drainage area. This is a strange phenomenon because it effects a remarkable economy that could not be otherwise accomplished. The water is not needed in the canyon where it is gathered for the reason that above the hole where it disappears there is plenty of other water, while below, the canyon narrows to a rocky gorge with no alluvial flats that could be benefited by the creek running on down, and here and there little springs furnish such watering places as wild animal life requires. On the contrary, however, on the other side of the ridge where the stream comes out again, it is the veritable redemption of the land. There it furnishes the only available stock water for the numerous herds that graze on Mesa Poleo, while enterprising farmers have conveyed it in ditches several miles to their ranches, where by producing crops and fostering homes it is making the desert tenantable.

Ranger Bill Says:

Inadvertently, so t'speak, I writ a personal letter on my own stationery t'other day.

Several fellers that attended our District Supervisors' Conference is sufferin' from "preacher's throat."

Jewel Dawn our Steno. finished two reports and a slip-on sweater last week.

DISTRICT 4.- INTERMOUNTAIN DISTRICT

rices for Wool Getting Back to Normal: William Allen White says there are only three classes of cattle and sheep owners in the West - those who are bankrupt, those who will be bankrupt when they sell their herds, and those who have handled so few stock they can take their losses. However, it is encouraging to note that on January 31 we reported no 1921 grazing fees delinquent on this Forest, and the appearance of wool buyers at this time of year is, we think, an indication that conditions are getting back to normal. We understand that several 1922 clips have been contracted for at around 30 cents, with $1.00 per head advance.--Nevada.

Hatchery to be Established: Renewed assurances have recently been given by tate Fish and Game Department that a fish hatchery will be established at rock this coming spring. The proposed location is an ideal one for re- ing the streams and lakes of the Uintah Mountains. The buildings are to furnished by the Indian Department. The Vernal Gun Club and local civic ies throughout the Uintah Basin have for some time been supporting a movement looking to the establishment of a hatchery in this section.--Ashley News Letter.

DISTRICT 4 (Cont.)

Motion Pictures in Demand: The four reels of official motion pictures received recently from the Department have been shown in Ogden almost every evening since their arrival. The films are "Making Railroad Ties on the Wasatch," "Work of the Forest Products Laboratory," "Trails that Lure," and "Wonderland Canyons and Peaks," and have proved very popular in Ogden. They are now in Salt Lake City and will be shown in Boise also before being returned to the Department.

City Life in Jackson, Wyo. We are experiencing some of the ranchers' troubl this winter. We are wintering ten head of horses within five hundred yards of the office and in the center of the residence section of the town and not over fifty feet from the house. Almost every night the elk break the fence of the lot, our horses get out and we have to bail them out of the city pound the next morning. We haven't decided which to kill, the elk or the horses."--Teton.

DISTRICT 5 - CALIFORNIA DISTRICT

Sad Accident on Angeles Forest: On January 28 Ranger Roger Bodine, with four head of Government pack burros and his saddle horse, started into a trail camp where four men were employed. When he arrived there it commenced to snow and seven feet fell. The following night it started snowing again and the Supervisor thought Bodine would probably attempt to reach the valley with the stock. On February 1 a Ranger was sent to his headquarters, the telephone being out, to ascertain whether or not he had returned. This Ranger bucked his way in through four feet of snow. Bodine was not there.

On February 3, after going to every sporting goods house, movie outfit and property house in Los Angeles, Supervisor Charlton finally succeeded in getting four pair of snowshoes and a rescuing party, consisting of Rangers Hayward and Viall, Cooperative Patrolman Donald E. Smith and an outsider, Al Foulds, was sent back to Mt. Waterman to assist Bodine. Several hours after they had started and with no way to intercept them, as the telephone line had been broken in a hundred places, Bodine 'phoned that he had bucked his way through the snow out to the Mojave Desert.

The rescuing party arrived at the trail camp and finding no one started for Valyermo. En route Smith fell over a bluff. This was on February 11 at 10 a. m. He was badly injured, so Foulds and Viall went ahead to get help and a stretcher. Hayward remained and did what he could for Smith, who died at 2 p. m. Hayward remained with the body for an hour to be certain he was dead and then walked to Valyermo, where he is now in bed with frostbitten feet and hands. The snow at this point was about 30 inches deep with seven foot drifts.

The Valyermo telephone line was out so Ranger Dorr's wife drove a machine 25 miles to Palmdale and telephoned the Supervisor the news of Smith's accidental death. Mrs. Smith was visiting friends in Long Beach and no one knew where, but Charlton finally located/her and told her of the accident. Five men went in after the body and the coroner said death resulted from concussion of the brain resulting from a thirty-five foot fall. The body was sent to Smith's home at Fowler, Colorado.

Australian Biologist Drops In: Mr. A. S. LeSoulf, of Sydney, Australia, who is in charge of the biological work for the Australian Government, spent some time in the office recently, discussing wild life conditions within the National Forests of the United States.

Mr. LeSoulf stated that his Government is attempting to develop the fur industry in Australia by stocking its forests with the opossum. Some opposition has resulted, as many claim the opossum causes injury to the eucalyptus timber. He reported that the Australian Government is also attempting to develop its seal industry, having a large number of seals around its borders.

Mr. LeSoulf was greatly interested in the progress this country is making in developing its fur-bearing animals, particularly fox farming in Alaska. He is completing his trip around the world and sails from here for Sydney, his home.--J.W.N.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Telling the World: Judging from clippings received by the District office during the past fire season, the value of widespread publicity in fire law enforcement cases is not yet fully appreciated by many Forest officers. As is obvious, the whole point of such publicity is the moral effect on possible offenders. If any man camping in or otherwise using the National Forests has read several times in the papers about persons having been arrested and fined for not totally extinguishing their camp fires, the chances are ten to one that this man is going to be more careful to see that his fire is out before he leaves it. Moreover, there is a fact that Forest officers should never lose sight of, and that is this - that while we may be thoroughly familiar with the danger, damage, loss and consequences of forest fires, as well as the penalties for fire trespass, very, very few of the public know anything whatsoever about any of these points. Moreover, we will never put over Fire Prevention in any real sense until the large majority of the forest-using public does realize these things.

Oregon and Washington newspapers consider law enforcement cases as news and are using such items whenever the information is given them. The $5.00 fine for an unextinguished camp fire is negligible - the real value and the real return is in the moral effect of such a fine on the public and the public is not going to know about it unless we tell them.--J.D.G.

He Was From Missouri: A local tree-growing enthusiast wrote the District office asking for information about growing shellbark and pecan hickory nuts. He was told where he might get such information, also that the Forest Service was not concerned with the growing of nuts. He came back with the information that there was a fine specimen of the shellbark hickory tree in Oregon City, and that the story was "told by a man who gathered up some of the nuts that a Missourian died and was buried there and he had a nut in his pocket which sprouted" - and grew to be the fine tree of to-day.

DISTRICT 7 - EASTERN DISTRICT

A Payment of $1,176.88 has just been received from the Laurel Railway Company in settlement of a fire trespass on the Unaka Forest (Virginia). The fire occurred on April 20, 1920, and its origin was traced conclusively to sparks from the locomotive on one of the Laurel Company's logging trains, operating between Damascus, Virginia and the Thayer Lumber Company's camps on the upper Straight Branch watershed. The estimated damages resulting from the fire were placed at $871.44, and the cost of suppression totaled $305.44.

The T. W. Thayer Lumber Company, controlling owners of the logging road, admitted its responsibility for the losses sustained. Action upon demands for settlement has been slow, however, and during most of 1921 Service action toward collection of the amount due was suspended to await the outcome of suits by the Laurel people against the Norfolk and Western Railway and arising out of other concurrent fires in the same section. Following decision in those suits in favor of the Laurel Company claims, Service demands for settlement were pressed, and the third demand from the Solicitor, which otherwise would have been preliminary to court action by the Department of Justice brought home the bacon as indicated above.--J.E.S.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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A STATEMENT

In reply to questions concerning recent statements in the press attributed to Secretary of the Interior Fall to the effect that the Forest Service had inspired attacks upon him in connection with various proposals dealing with the National Forests of Alaska, Col. W. B. Greeley, Chief of the Forest Service, said to-day that the Forest Service has never attacked or criticized Secretary Fall and has not inspired any such attack or criticism.

"Following a personal inspection of the National Forests in Alaska in 1920," said Col. Greeley, "I wrote an article on the situation in Alaska which took issue with the proposal to turn the natural resources of the Territory over to a Development Board. This proposal was an old one, having appeared and reappeared at a number of different times in the discussion of Alaskan affairs. The article in question was given the American Forestry magazine for publication several months before Secretary Fall assumed his present duties. My position regarding the National Forests in Alaska was restated plainly in the official hearings held subsequently by the Committees on Territories of the House and Senate. Everything I have had to say on this subject has dealt solely with the principles of Federal administration in Alaska and included no criticism or attack upon anyone."

Col. Greeley further pointed out that the Forest Service has no connection with the American Forestry Association, which is an independent organization acting upon its own initiative and in accordance with its own purposes. "Whatever the American Forestry Association has had to say about the National Forests in Alaska or any other subject," he states, "has been said without any suggestion or participation on my part. The American Forestry Magazine has occasionally quoted from my published statements or testimony before Congressional Committees; but that is the extent of my connection with material used by the Association."

Col. Greeley went on to say that since Secretary Fall proposed the transfer of the National Forests to the Department of the Interior, he has been deluged with letters and personal requests for his opinions on this matter. He stated that in no instance has he made the slightest criticism of the Secretary of the Interior or of the Interior Department. "The idea," said Col. Greeley, "that the Forest Service is conducting propaganda against the Secretary of the Interior is absurd. The question as to which Government department should administer the National Forests should be settled on its merits as a matter of public policy. Secretary Fall is misinformed if he thinks that the Forest Service is making any fight upon him."

Weeding out Red Tape

By H. I. Snyder, Cleveland

Uncle Sam's red tape seems to worry people an awful lot. We fuss and fume around about the trouble we have in making this report and writing a lot of "junk" on that subject; all of it seems so unnecessary. True, it is sometimes difficult to meet the requirements when a fellow knows he has a lot of other important matters to work on immediately. But the man who attends to those important matters and fills those red tape requirements at the same time is the man who really earns his salary. Some may say they are being overworked. At the same time maybe they do not know how to work to get the most

Weeding Out Red Tape (Cont.)

accomplished in a short time. Work on so-called red tape is a good deal what we make it. Hit the high places hard and weed out the unimportant parts. Don't go into details and make a lot of fuss over something when it is not expected. When a professor gives his students a tremendously long assignment, the students soon learn to pick out and get a knowledge of the most important parts, the parts that really count, and let the rest slide. Likewise, in gogernment reports and assignments we must learn to pick out the important parts and lay stress on those things that are going to give what is wanted. Sometimes it is hard to determine what is wanted by our superiors, in which case we make a "grand stab at the reply, do the best we can, and, if the result is not what is wanted, we have had the satisfaction of working our gray matter on something that may help it to circulate a little faster next time. Maybe "next time" the other fellow will understand better what we can produce. If the productions in their collective concrete results are not satisfactory, the requirements will meet a natural death. At any rate, we can be game, meet the requirements in the most efficient manner without saying or doing a lot of unnecessary things, and red tape will cease to be a burden.

Shooting Elk Movies on the Absaroka

By Ernest W. Shaw

A recent issue of the Service Bulletin contained an SOS for an account of the "elk movie stunt" recently pulled off on the Absaroka Forest in Montana. A public request such as that is not to be lightly ognored, so I'm stealing some time this Sunday afternoon to give you a flash or two of just what was done.

Taking moving pictures of wild game bears little resemblance to hunting with either a gun or a "still" camera. It was our first introduction on this Forest to the "movie" business. We soon discovered there was little or no romance attached to the taking of the pictures. It is maintained without fear of successful contradiction that there's no romance in packing a hundred pound camera and tripod on your back up a slope as steep as the roof of a house until you have to kick your tongue out of the way to keep from stepping on it. Zest is likewise added to the game when you discover on reaching the top that the animals which should by all rights be grazing peacefully on that nearby slope have left suddenly for parts unknown without leaving a forwarding address, and it's a long half mile back down a slippery hillside, with flat smooth rocks cunningly concealed beneath the snow to the horses - and that pesky camera has to be packed down. Repeat this performance as many times as your imagination will allow, and then ask yourself, "How do you like the movie game?" Add three feet of snow and throw in some "webbs," then pile on top of that a day now and then with the mercury standing twenty below at noon with a thirty mile wind howling, and you won't have to ask.

Personally, I can assure you all that this picture will contain some wonderful winter scenery, some mighty fine elk pictures, and some rotten acting.

It seems that the public fail to appreciate a movie of scenery and such, unless it's handed to them wrapped tightly around a plot or story of some kind. Recognizing this trait of mind, F. W. Perkins and G. R. Goergens, of the motion picture branch of the Department, arrived in Livingston late in January with a plot (written by C. A. Lindstrom--Ed.) well worked out. Some minor changes were later made to fit conditions as they were sought or were thrust upon us.

Since Uncle Sam has no funds for employing screen favorites, the local personnel of the Forest with some others were shanghaied into "sets" and made to believe that all there is to this acting game is to be natural and never look at the camera lens.

As footage containing the human element could be obtained later and at any time, we tackled the game stuff first. We worked almost a week with only partial success. Then in parts of two days Goergens was successful in turning off all the footage of elk needed. Bands of them stringing up a snow slope, bunches and individuals pawing in the deep snow for feed, elk lying down and standing up. In fact, doing all the things we needed them to do but die.

Shooting Elk Movies on the Absaroka (Cont.)

We needed some hungry looking and at least one dead bull. They persisted in being fat and saucy. The elk this winter have been broken up in small bands and are wilder than usual, seeking out and remaining largely in the timber far back and high up on the mountains on the winter range. A few calves only were getting noticeably weak. Had the taking of this picture been postponed until this date, March 1, we could have obtained many more of the kind of pictures desired. Mature elk are finally giving up the struggle. Cold storms out of the east continue in rapid succession. The snow in the mountains slowly deepens. It is easy to forecast the usual result to the game. Also tooth hunters have been more active than usual; and, by the way, the main plot of the film is woven about a tooth hunter.

Along with the hard work there were some bright moments. Scenes where the actors were supposed to have a terribly threatening scowl on their faces had to be retaken because those faces would break out into a broad grin at precisely the wrong time.

Just after taking the scene, where the tooth hunter had "lifted" a pair of teeth and was seated in the sun examining and admiring them, it was desired to get a close-up of his hands and the teeth. The footage of the arrest had also just been made. One of the party had loaned a pair of teeth for this purpose. They were rather light colored and so he suggested that a more beautiful and highly colored pair be substituted for the "close-up." This was done, but as he was digging in his wallet for them he disclosed three more pairs, acquired through several years of legitimate hunting and collecting. One other of the party, looking over his shoulder, saw his cache and drawled, "Say fellers, looks to me like we've arrested the wrong man!"

The actual arrest of the poacher is straight "stage" stuff. It wouldn't be pulled that way in real life, but accuracy had to be sacrificed for screen effect. As the poacher laughingly remarked to the two officers who were approaching him with portrayed stealth and cunning, "I'd have to be blind, deaf and dumb for you birds to pull an arrest like this!" However, the camera men say it's good stuff and will take with the people. Well, here's hopin'.

The Ranger who took the part of the poacher, was not mean looking enough without "make-up." It was a most embarrassing process the first time for this hard boiled mountain man, but he finally got to "begging for it." "Here," he once called out, "where's my make-up? You birds know d---ed well I can't act without make-up!"

One old-timer, when asked if we could get photos of elk in his haystacks, insisted that we could get anything we wanted up at his ranch, even to a drink of Scotch. He wound up by throwing his hands in the air and growling, "By heck! I've either got to get out of the cow business or out of the elk business. I can't run both at the same time from the same ranch base!"

The only piece of real business that wasn't faked, and, shame to relate, wasn't took, was of one of a certain Washington man who attempted to mount his horse from the right side. That bronc sure buried his head and went after him, piling his rider in three feet of soft snow. Like Mark Twain in one of his inimitable stories, "I ain't going to be personal or call any names," but just ask Goergens if he knows which is the right side of a horse to get on.

There's a bunch of Forest officers on the Absaroka who are going to be mightily disappointed if those pictures, reels, films or whatever you call 'em, don't show on the face of 'em that they were made under plumb natural conditions. Natural as to cold, wind, and snow. Not made in southern California, with fields of salt strung around carelesslike to imitate the "beautiful." I'd tell the world they weren't.

Another State Fire Law Comesto Life

By James E. Scott, D-7

Forest Clerk Eunice L. Brown, Rangers T. E. Hale and Abner Casey, and Fire Guard Charley Plum, of the Arkansas National Forest, recently captured the honors of bringing about the first conviction ever secured under the forest fire law of Arkansas. Not only that, but the conviction was secured in Montgomery County, which in former years was known as a center of active opposition to conservation policies and the Forest Service. From the report of the case the local prosecuting attorney, his deputy and the local justice of the peace are all lined up solidly behind the fire law enforcement program, and the outlook is highly encouraging to Supervisor Plymale and the other local officers.

In this case the offender was one Kelley Willhite, who was seen about 10 A. M. February 12 by Fire Guard Plum walking away from a fire that had just been started on the Forest. Upon being closely questioned by Plum, Willhite admitted that he had set out the fire, but stated that he had done so for the purpose of warming his feet and that he was leaving the fire to see if he could get some one to assist him in extinguishing it. Plum requested Willhite to go back and extinguish the fire, which he did. The two then went to a telephone and Plum called Ranger Hale and told him of the case. Plum held Willhite until Hale arrived and took him in custody, going direct with him to the Oden Ranger Station. Ranger Hale called the Forest Supervisor's office for instructions. The Supervisor was absent, being in attendance at the Asheville conference, and Mrs. Brown, the Forest clerk, immediately started action by getting in touch with the prosecuting attorney and his deputy, who were attending circuit court at Mt. Ida, the county seat of Montgomery County. The prosecuting attorney instructed Mrs. Brown to have Willhite brought immediately to Mt. Ida in order that he might have him properly arraigned. Hale was instructed to take Willhite to Mt. Ida without delay. This he did, but upon his arrival at Mt. Ida a long drawn out murder trial was in progress in the circuit court and the Deputy Prosecuting Attorney was delegated to handle the case. After a conference with Rangers Frank Hale and Abner Casey, the Deputy Prosecuting Attorney arraigned Willhite before Justice of the Peace Woods on the charge of violating the State fire law. Willhite pleaded guilty and was fined $10 and costs by Justice Wood.

MATHER FIELD IDEAS

Law Enforcement

By P. J. O'Brien, D-1

****The general principles, with slight modification, on which law enforcement is based, are as old as Magna Charter itself. Law properly and vigorously enforced is justice. If we adhere to justice, we can not in the long run receive but commendation from the public and the people we have to deal with.****Prejudice, sympathy and the exercise of discretion, are the enemies of justice, and we can hardly expect to be successful permanently in law enforcement work if either of these enter into our conception of law enforcement. All must be treated alike, whether friend or foe. A different policy will in time prove disastrous.

****Forest officers in the performance of their duties are permitted to exercise a sound discretion in handling ordinary business problems on the ground. Because of this praiseworthy practice, some officers are prone to apply the same policy when enforcing penal fire statutes. In the light of experience, however, I think all of us will fully realize that for the good of the Service and as a matter of simple justice, a strict enforcement of the State and Federal fire laws is the best for all concerned. When an offense against any fire law is committed the only function of the Forest officer is to determine the offender and require him to appear for trial before the proper tribunal. If there are any mitigating circumstances in the case, it is for the court to consider them and exercise discretion in imposing the penalty.****

Personally, I have no fear of reaction of public sentiment because of a stringent enforcement of the penal forest fire laws. I have, however, met a few splendid Forest officers who seem to be obsessed with the idea that a strict enforcement of these laws would result in the destruction of large quantities of private and government timber. I for one do not feel that there is any cause for alarm in this channel. To become indifferent to the enforcement of the law on this theory would be fundamentally wrong because if this principle be injected into our relations with public law in general, in time there would be no respect for any law or the lawfully constituted authority of the State. If the members of the Forest Service feel that the law should not be enforced, then the proper way to proceed is to ask for its repeal and seek other means as a fire preventive.*******

Like other National Forest work, I believe the responsibility for law enforcement should rest on the shoulders of the Forest force. The employment of specialists at the District office insufficient number to cope with the situation in the fire season would require a very large outlay for salary and travel expenses. Even then, I doubt very much whether their work would be any more successful than that of the local Ranger of ordinary intelligence who is enthusiastic for law enforcement.****

All of us realize that the best work in tracing any criminal can, as a general proposition, be done immediately after the offense shall have been committed. Clues are found and sound theories developed more often by the man first reaching the fire than could be expected of a specialist who learns of the crime several days later.

I don't believe we require the assistance of the sleuth or that we should make our investigations surreptitiously. Investigations made in the open command the respect of the local community, and very often secure the cooperation of those persons having respect for the law.

Occasionally, of course, it may be prudent to secretly investigate a fire trespass case, especially when there is reason to believe that the fire is the result of a conspiracy or of wanton maliciousness. In cases of this kind I am convinced that a local man with common sense is as likely to discover the criminal as a specialist unless the specialist be permitted to live in the community under cover for a long period. I have given this matter some thought and I have not been able to discover anything that would convince me of the advisability of centralizing in the District office the investigation of fire trespasses or the employment of more than one or two specialists in each District whose duties should be to instruct and encourage the field force in the work, to help in the coordination of all law enforcement agencies, and to cooperate with county prosecuting attorneys in handling special cases. So much for centralization.

A specialist on the forest would render more efficient service than one in the District office, but I doubt the advisability of assigning one to the work. It seems to me that the fire assistant is the man that should be a specialist in fire law enforcement as well as in control and suppression. This officer is in a better position than anyone else to put over to the Forest force the principle on which law enforcement is desired. **** It has been my experience that the moment you select for any disagreeable work a particular officer, the tendency of every other officer is to slough on to the special man all of the disagreeable undertakings. For these reasons I think a specialist on the Forest is not essential. Our aim should be to develop each existing Forest organization into an enthusiastic and specialized law enforcement machine, and I so recommend.

There should be no compromise in a criminal fire trespass case. If the trespass be a criminal act, the offender should not be allowed to evade the penalty provided by law, by compensating the government for the cost of the damage done. The offender should be required to pay the penalty for the crime and compensate the government, too, for the injury done.****There are times, of course, when a moral certainty convinces the investigating officer of the criminal guilt of a trespasser, but evidence of such guilt is impossible to collect. At the same time, because of the relation of the trespasser to the land on which the fire started, he is liable civilly for the cost of suppression or for the damage done to adjoining property. In this kind of a case, the cost of suppression or the value of the damage should be demanded by the Forest Service. This transaction is not, however, a compromise with crime. The criminal prosecution was not undertaken for want of sufficient evidence.****

One of the most necessary things in our law enforcement program is to cultivate the friendship of each county or prosecuting attorney in the Districts. Their assistance in the prosecution of fire trespass cases before justice, probate and other State courts is invaluable. While there are a few justices who conduct the criminal cases brought before them independently, the great bulk of them, however, consult the prosecuting attorney as to what the punishment shall be for a specific offense.****Of next importance is the good will of the sheriff's office. There are so many ways that the sheriff can help by suggestion and otherwise that I shall not go into details. One thing I would like to mention is that we should never assume that the county attorney or other law enforcement officers are not willing to help the Service. We have been mistaken in this thing too often.****

To my mind, the very best way to gain the support of local prosecuting officers is for the law enforcement officer, the Supervisor and the Ranger to visit him personally for conference and an exchange of views. After a case has been handled by the prosecuting officer, a nice letter of appreciation should be sent him by the District Forester or the Supervisor.****Then again, the prosecuting attorney of the local county should be invited to take part in nger meetings on the day that law enforcement is the subject for discus-

Busted Bubbles

By Roy Headley

When at the Edgewood Arsenal recently, seeking expert chemical help on the question whether some gas might be found to use in fire fighting, I was told that the experts of the Gas and Flame unit considered that the use of gas is not practicable for us, unless it might be in one of the frothy mixtures like that used in the "Foamite" fire extinguisher.

Following up this idea we got a copy of the Bureau of Mines Bulletin 170, which deals with frothy mixtures; we asked a Foamite salesman to see us and we called for help on Research and on Mr. Murphy, who being a graduate chemist and interested in fire extinguishers, was able to help very much indeed.

The result of the inquiry is positively negative. In the vernacular there is "nothing doing." There are various difficulties in the way, but the key log in the jam of obstacles is that it would require 78 gallons of the liquid to lay a ribbon of the noninflammable bubbles 12 inches wide, 2½ inches deep and 1/8 mile long.

Such a gas would be most useful when a fireman finds that a fire is just a little more than he can handle. If he had a chemical which would multiply his fire fighting powers even temporarily, it might make the difference between success and failure; but if the chemical ingredients could be carried in dry form by the fireman he would still be under the necessity of rustling 78 gallons of water to make the mixture that would stop 1/8 mile of fire - or 39 gallons for 1/16 of a mile. Quite obviously, it wouldn't pay. He could dig a control line quicker with a hoe or shovel.

So the frothy mixture must be laid away to rest alongside of the other chemical fire fighting hopes which have thrilled us from time to time. This is not saying that time is wasted investigating such leads. There is no telling when some fool idea may turn out to be a good one and we can't afford to overlook any bets.

Winter Feeding of Mt. Dome Antelope

By J. W. Nelson, D-5

Owing to reports received from various sources that antelope were being wantonly slaughtered in northwestern Nevada and southeastern Oregon by tramp basque sheepmen, it is of interest to learn of the presence of antelope around Mt. Dome, Shasta County, and the attitude of the local ranchers.

For several years past antelope have been wintering in the western part of the Modoc lava beds, principally around Mt. Dome. This is extremely rough territory and is little frequented, and because of lack of water stock have not fed it off. Usually in winter there is an abundance of dry bunchgrass and browse which is high enough to be in reach of the animals in ordinary winters.

The first count obtained by Mr. Ash Carsley, a cattleman residing near Mt. Dome, was 35 head. This number has increased to 97 head at the present time.

During severe winters numbers died of starvation, and Mr. Carsley, and at times Mr. Mitchell, fed hay to these antelope, which because of this fact came down to the corrals as soon as the snow was deep and were easily counted.

They are very tame at this time and could be readily killed, and for this reason the local ranchers are very much in favor of the establishment of a Federal Reserve around Mt. Dome so that the protection of the antelope can be assured.

The Academy of Sciences was informed of the condition of the antelope and that Mr. Carsley had been feeding them in the past, and immediately supplied the necessary funds with which to buy alfalfa hay and to employ a man to feed it out. Mr. Carsley was employed and is to feed the hay for $15 a ton.

*****

What Say?

Does a mountain lion scream?
Some say he does, others say he don't.
Darned if I know.
Do YOU?--Editor.

Forest Service Loses Fire Case

By Paul D. Kelleter, Wash.

Verdict was for the defendant in the recent suit brought against the Forbes Timber Company at the instance of the Forest Service. This means that the Government failed to make its case and did not succeed in its effort to collect from the defendant the sum of $2,154.91 spent by the Forest Service in suppressing a fire on the Snoqualmie National Forest in Washington.

The record in the case as submitted to the Department of Justice indicated the probable cause of the fire to be traceable to a donkey engine operated by the company having a defective spark arrester. Exact cause was not known but it seemed an admitted fact that the fire started from the logging operations of the defendant.

Action was instituted under the State law "any fire on any forest land in the State of Washington, burning uncontrolled and without proper precautions being taken to prevent its spread, is hereby declared a public nuisance by reason of its menace to life or property. Any person, firm or corporation responsible for either the starting or the existence of such fire is hereby required to control or extinguish it immediately."

Head Lettuce and Land Classification

Much concern has been given the Supervisor and the District Office at Denver regarding the stability of the agricultural classification of portions of the San Isabel National Forest as a result of the pressure to reclassify small areas claimed to be adapted to the growing of head lettuce. Considerable experimental work has been done on private lands within and close to the Forest, but the successful growing of lettuce has not been demonstrated. In addition to the reclassification, there is also a demand for cultivation permits for the purpose of growing head lettuce on small areas.

The activity has come to be very generally introduced throughout the mountain regions of Colorado and some high grade head lettuce produced. It can not yet be said that anyone has successfully demonstrated the adaptability of Colorado mountain lands for head lettuce growing, but doubtless with further experimentation the industry will succeed.

The Supervisor of the San Isabel has succeeded in persuading the interested people in the Hardscrabble Valley that they should organize, and was requested to prepare articles of incorporation, a constitution and by-laws for the Hardscrabble Mutual Produce Growers Association. A report has just been received giving figures on costs and profits of lettuce growers operating on an area of about 100 acres. The cost of production, including delivery at the railroad, which latter item amounts to 15¢ per dozen heads, crated, was $29,300. The total amount paid the growers, ranging from 10¢ to 30¢ per dozen heads, aggregated $30,000. It is quite apparent that the net returns to the growers had a good deal to do with influencing the farmers in effecting an organization. It is certain that the help which the Supervisor has given and the confidence which the people have in his intention to work to their interest will have weight in the agitation which has been made for restoring some of these forest lands to entry so that they might be used for cultivating lettuce.--D-2

FOREST PRODUCTS LABORATORY

Paul Bunyon Visits Laboratory: The renowned Paul, patron saint of all foresters and lumberjacks, sat in with the Laboratory men who attended a banquet a hundred strong in honor of Assistant Director O. M. Butler, who left March 1 to act as forester in the American Forestry Association. After the banquet, Paul presided over an examining board that went into Mr. Butler's qualifications as a forester prior to passing him out of the Forest Service to practice forestry outside the fold. His field experiences in Districts 1, 3, and 4 were overhauled even to ascertaining his knowledge of the trees growing above timber line. Mr. Butler's proxy finally slipped through and was awarded his diploma.

Some Walnut: Anything to cash in on a good old name. A firm recently sent the Laboratory a sample of wood for identification. It was being sold in their locality under the inspiring trade name of "Swamp Walnut." Examination showed it to be nothing more pretentious than humble black willow! Next!

The Kiln-Drying Sleuth: A sash and door manufacturer recently questioned whether a shipment of lumber which he had received had been kiln dried, the seller claiming that it had. By means of moisture and stress determinations of a sample of the wood in the shipment, the kiln drying engineer put on the case decided that the evidence was against the lumber ever having been kiln dried.

Wood Enters Everywhere: We have paint manufacturers interested in Laboratory results largely through the boxing and crating work. But here comes this inquiry from a pigment and chemical company:

> In the process of manufacturing Lithopone we dry the moist filter press cakes, which are about 2 feet square and $1\frac{1}{2}$ inches thick, on wooden trays, some 32 of which are placed on a truck and wheeled into a tunnel dryer. The drying takes perhaps 36 hours, the trucks advancing through the tunnel in a direction opposite to the circulating air, which is heated to a maximum temperature of perhaps 240 degrees Fahrenheit.
>
> We write to ask what kind of wood will give the most satisfactory service under this exposure to moisture and heat.

FOREST EXPERIMENT STATIONS

Priest River Station Moves: Recently the office of this experiment station was moved from Priest River, Idaho, to Missoula, Montana. The location of the experiment station is 14 miles from the railroad, in a part of northern Idaho where winter lays siege to humanity for about five months every year, with three to five feet of snow and a none too passable road to the outside world. Partly because of the entire lack of professional and social contact during this time and partly because of the inconvenience of reaching various parts of the District due to the isolated location of the station, it was decided to move the office to the more central and habitable location at Missoula. The experiment station plant at Priest River is to remain the field headquarters for the studies in the white pine type.--R. H. Weidman.

Planting Research: The supervision of forestation studies at Savenac Nursery near Haugan, Montana, has been transferred from the office of Forest Management to the Priest River Experiment Station. Although forestation studies are provided for by planting funds, the present arrangement was made chiefly that the planting research man might have closer research contact and supervision.

Rehabilitation of Priest River Station: After having been reduced to a one-man staff for over four years, the force of the Priest River Experiment Station has been enlarged this year to three forest examiners and a clerk. Although the station has accomplished very important work in the white pine type of northern Idaho, despite its limited personnel, there still remain in District 1 four or five commercial types in addition to white pine, and these have hardly been studied at all. In all of these types there is need particularly for studies of reproduction, yield and methods of cutting. And with forest fire conditions in this region the worst in the country, if not in the world, there is need most of all for intensive fire studies. With one man on general studies and supervision, one on silvical studies and one exclusively on fire studies, it is the plan of the station to make a good start this year on its enlarged scale of work.

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Such is Fame

Lady on Telephone: "Who is this?"

Forest Officer: "The U. S. Forest Service."

Lady on Telephone: "Well, what kind of a place is it, a garage?"--Wiley,
Santa Barbara.

DISTRICT 1 - NORTHERN DISTRICT

Exploitation of Lodgepole Pine Type: Mr. George W. Lorenz, tie and timber agent of the Union Pacific and associated lines, called at the District office recently to discuss tie resources of District 1 forests which are accessible to the Oregon Short Line. Mr. Lorenz states that the company desires to get from the forests along this line sufficient ties to operate the treating plant at Pocatello, which has a capacity of about a million and a quarter ties per year.

Headquarters Changes: The headquarters of the Bitterroot National Forest was established at Hamilton, Montana, February 15. The headquarters of the Bitterroot Forest was originally at Hamilton, but was transferred to Missoula in 1905, when Mr. E. A. Sherman who was supervisor at that time, was placed in charge of the Lolo, Missoula, and Bitterroot forests as Inspector.

The office of the Lewis & Clark Forest will shortly be reestablished at Choteau as a result of the splitting up of the combined administration of the Jefferson-Lewis & Clark Forests.

The joint administration of the Flathead-Blackfeet Forests will be discontinued during the month, and the offices of both Forests will be continued at Kalispell.--Morrell.

Timber Survey on Kootenai Forest: A timber survey has just been completed of Barron and Bristow creeks, Kootenai Forest. These drainages are located near Warland, Montana, on the opposite side of the Kootenai River. They are the most logical units for the Baird Harper Lumber Company to develop next. They contain about 100,000 M feet of timber including the privately-owned timber.

The timber will average about 12 M per acre and is about 60% yellow pine.

Weather was from 16 to 20° below zero most of the time, but tough snowshoeing prevented any suffering from cold.--Girard.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Big Sales on Medicine Bow and Colorado: The sale of the State Line unit within the Colorado and Medicine Bow Forests has recently been awarded the Fox Park Timber Company. This unit includes approximately 47,000 hewn railroad ties, 284,000 board feet sawlogs, and 695,000 linear feet of mine prop material which have been sold at the following rates: ties, 14½¢ each; sawlogs, 50¢ per thousand board feet; mine props 25¢ per hundred linear feet. The amount bid for railroad ties exceeded the advertised rate by 2¾¢ each, because of a recently announced decrease in the freight rate on the C.W.& E. Railroad from Fox Park to Laramie, prices bid on the other products being the same as those advertised.

Block one of the Lake Creek unit, within the Medicine Bow Forest, including 110,000 hewn railroad ties and approximately 1,000,000 feet sawlogs and 1,800,000 mine props has been awarded to the Otto Lumber Company. In this case, the amount bid for hewed railroad ties was 13¢, exceeding the advertised rate by 2¢ for the same reasom. The rates bid on other products were the same as those mentioned in the advertisement, 50¢ per thousand board feet sawlogs, 25¢ per thousand linear feet for mine props.

Mr. H. I. Loving, Chief of Finance and Accounts, Washington office, made a brief visit to the District office on his way east.

H. N. Wheeler, In Charge of Public Relations, is in Minnesota lecturing on fire protection and other forestry problems before civic and educational bodies in the principal cities of that State.

Forest Supervisor Clark of the Rio Grande Forest, in conference with the Advisory Board of the Conejos Canon Livestock Association, expects to adopt the plan of making a written working plan for the range riders employed by the stockmen. This would involve the placing of salt at designated points, maintenance of fences, and other items in connection with the handling of stock upon the range. This introduces a new idea advanced by the association itself, and an opportunity for real concrete cooperation.

Ranger Bill Says:

If you're goin' to plant a tree fer that boy of yourn, I'd recommend a willow, said Ranger Ed Skinner.

Super. Jim is offerin' to give away a lot of fine plans for spendin' money since he come back from the allotment conference.

I've got a hunch that Rangers' backyards figger in a good many efficiency ratin's.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Rangerito Right on the Job: Young son of Datil Ranger discovers fire and makes quick report to father, who gets rapid action on guilty sheepherder. Many incidents of good work on the part of members of Rangers' families have occurred in the Forest Service. Here is another one to add to the collection. On February 16 Ranger Hiler's boy, Frank, Jr., discovered a fire. His report time was "00." Hiler, Sr., continuing the speed, suppressed the fire, picked up clues consisting of iron-shod heel marks in company with ground impressions from nonskid auto tire sole patches and burro tracks, which led him to a band of sheep about a mile across the canyon. Herder admitted blame and stated he had set the fire for a signal to show the location of the sheep. He was arrested and listened with interest while the judge, in response to his plea of guilty, solemnly said, "Fifteen dollars and costs."

Special Uses: Figures just compiled show that in the District there are in force 7,284 special use permits of which 3014 are charge and 4270 free. This is an increase of 429 over the year before. However, since 404 of the increase were free permits, there has been very little growth in revenue. Of the individual forests, the Coronado has the largest number of permits - there being 825 on that forest - while the Carson has the smallest with only 120.

Plant Physiology: Plants eat the same as animals; their roots are their mouths and their leaves are their stomachs. All the digested food above the amount necessary to sustain life is stored away in the fleshy parts of the roots, and like the fat on a cow is available for a day of need. In the early spring before the plant has time to store up this excess, if a hungry cow bites off two-thirds of the leaves the plant has lost its stomach, and dies of starvation. That is what happens on prematurely grazed ranges. A certain per cent of the plants die and the carrying capacity annually gets less and less.

Early Spring and Young Horn: Common chain of sympathy links the lean cow and the lank man in a philosophy that is born of emptiness. A cow's viewpoint of premature spring range is just about the same as that of a hungry man in a modern cafeteria at breakfast time who picks up a grapefruit here, walks clear across the room to pluck a doughnut, and then finds that he must come back in line again in order to get a cup of coffee. The water content of plants just coming up is about four times what it is later in the season. A certain amount of dry matter is absolutely necessary in order that feed may sustain life, and in the early spring a cow has to eat about four times the amount she does in summer. To get that amount she must travel nearly ten times as far due to the wide spacing of the few green plants.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

The Way of the Transgressor is Hard: In 1919, George Lee Johnson served as a fire fighter for 11 hours. His pay was $5.50. The season was a bad one, as is well known to all Forest officers, and in the rush an error crept into the pay roll with the result that Mr. Johnson received a check calling for $50.50, which he proceeded to negotiate. When the error was discovered he was requested to make good the $45.00 which he stated he would do when he got ready. He did not get ready for two years and when pressed said we could go to it. We did, with the result that information has just been received from the United States Attorney at Boise that judgment was the other day taken against Johnson in the Federal Court. There being no imprisonment for debt in this enlightened age, the next question is whether Johnson can ever be found with something out of which execution may be had. If he carries all his worldly goods on his back he may still outwit us.

DISTRICT 4 (Cont.)

Publisher Visits Office: Mr. George Cornwall, publisher of the "Timberman," of Portland, Oregon, together with Mr. Morrison of the firm of Morrison & Merrill (wholesale and retail lumber dealers) of Salt Lake, called at the office yesterday. They were making inquiries concerning the Kaibab timber, and Mr. Cornwall, as usual, was looking for news for his paper. He stated that a logging tractor which he and others have been working on for a long time is now "coming out of the woods." He is attempting to develop a steam caterpillar tractor, the fuel for which will be coal oil or gasoline and which will use only a bucket of water a day; which will not only haul the logs down the skid and log loads, but will yard to the tractor by means of two yarding cables for a distance of 1,000 feet on each side of the little wonder machine. His work promises to be successful.

Sheep Scabies in Idaho: One of the Idaho Supervisors states that Idaho is apparently free from scabies in sheep. As a matter of fact, Idaho is not clean; at least, there were reported after January 1, 1922, a few bands of sheep in the Mountain Home section of the State in which scabies had developed. Nothing serious, however, is anticipated, as the scabies commission is on the job and is keeping in very close touch with the developments.

DISTRICT 5 - CALIFORNIA DISTRICT

Ranger DeLapp to the Rescue: On January 29, about 4 a.m. it started snowing (not an unusual event here) driven by a strong cold wind. About 4 p.m. a man came to the Station and asked what the condition of the road was ahead. It had snowed two feet by this time and I told him I did not believe it possible to make the pass, which was drifted full. We went out to the machines, about one half mile away, and told the people the situation; there being 12 machines stalled. Some tried to pass the Station, but could not make it. I told them they were welcome to come in. There were several women in the cars and they were suffering from the cold and hunger, as many of them had not eaten since morning. We got them all into the Station and served them with food. The bedding was divided among the women and the men sat up around the small heating stove, making about 35 people in a 12x14' room.

Early the next morning two men got into the Station in an exhausted condition and said they thought there were more machines down the road. Chas. Novotny, the lookout on Frazier Mountain, and I started out. The storm was still going, the snow being waist deep and you could not see 20 feet ahead on account of the wind driving the snow. We found 29 cars stalled and occupants in all of them, some being women and children, who were suffering terribly from the severe cold and exposure. They had sat in the cars all night, not knowing where there was shelter. We got them all into the Station, making about 60 people there. This last crowd had not eaten for over 32 hours and many of them were in an exhausted condition, as they were not accustomed to the cold and were thinly clad. I found in one car a man, wife and four-year old boy. The father had taken off all his coats and wrapped them about the boy. He was suffering from the cold, and Novotny and I had to literally drag all three into the Station, it taking nearly an hour to make a half mile. Here the man had to be "thawed" out. Practically all of the ladies were in a stage of collapse and some of the men also.

Our food supply and wood were about gone and on Monday night, when it stopped snowing, one of our grazing permittees sent two pack horses of grub to us, which in itself was some job. Tuesday it let up snowing for short intervals, with 39 inches on the level. We got a sled through from Lebec and sent most of the ladies on that. A party of Legion men, who were accustomed to heavy work, broke a foot trail through and we sent every one to Lebec. Some of the ladies walked, and every sack, etc., was torn up to provide wrapping for the feet, as it was freezing. Three ladies not taking this precaution received frozen feet. Some wonderful pluck was shown by the people who walked to Lebec.

Some of the party helped in the kitchen, serving in relays good old coffee, bacon and beans. Only one fire could be kept going on account of the wood supply, and this was not enough to warm the house. Some of the people had not slept for several nights, and they parked themselves on the floor, desk, tables, or any place they could.

The station telephone resembled an overworked fire season, as the newspapers and parties were telephoning about missing parts of the family tree.

DISTRICT 5 (Cont.)

Recreational Value of Forests: Apropos of the discussion of the recreational value of National Forests: In 1912 and at a cost of $1,600 (cooperative money), the Service constructed four miles of trail into a hitherto inaccessible canyon on the Angeles back of Los Angeles. To-day there are outstanding special use permits in that canyon for 250 summer residences, two resorts, three stores; an annual rental income of $5,250 and an annual travel over the trail of 50,000 hikers. When the canyon was first thrown open for summer home sites 250 applications were received in 3 days.--R.H.C., Angeles.

DISTRICT 6 - NORTH PACIFIC DISTRICT

EW Tell 'Em! Can some one tell the Colville Bunch and others why we should be expected to run a car for 7¢ per mile when gasoline costs us 42¢ to 45¢ per gallon and rough roads to travel, when in some other Forests gasoline costs 23¢ to 26¢ per gallon, and they run on good roads? Mr. Harvey of Washington State Highway Commission says it costs over 9½¢ per mile to run their cars. They furnish the cars, too, and buy all supplies and equipment at contract, and undoubtedly travel better roads than we do.--E.W.W.

Publicity: Jackson County, Oregon, is planning on a fair in September. They propose to erect a permanent forestry and mining building to be built of logs. The Forest Supervisor of the Crater has been asked to cooperate in planning the building and arranging for an exhibit for it.

Recognition: Supervisor Pagter of the Colville has been commander for the past year of the Leo K. McCormack Post No. 8, American Legion, of Republic, Wash. Mrs. L. B. Pagter is president of the Woman's Auxiliary of this Post.

A Problem in Highest Use: An application has just been received for a hotel site on Railroad Creek Bar for the purpose of erecting a $25,000 hotel. On top of this comes an application for a power site at Domke Falls. The idea is to divert flood waters of Railroad Creek into Domke Lake and then shoot the water down to a plant on the shore of Lake Chelan 1,300 feet below. The power will be used at Chelan and vicinity for pumping water for irrigation purposes. This will involve destroying Domke Lake as a recreation ground and will detract from the beauties of Railroad Creek. It will also mean forty miles of transmission line paralleling our telephone line and cabling across the Lake. Making a reservoir of Domke Lake and reducing the waters of Railroad Creek will greatly detract from the advantages of a hotel at Railroad Creek Bar.--G.E.M.

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FORESTRY IN AUSTRALIA

(Extracts from a letter to Col. Greeley from Mr. H. D. Tiemann of the Forest Products Laboratory)

"I am beginning to get a pretty good idea of Australian forests or 'Bush' as it is called here, and forestry conditions, and the most striking condition is the disastrous effect of repeated fires. In fact, most of the forests have been more or less injured by fires, and, unfortunately, there is very little sentiment among the country people against them. My great hope is to be able to arouse sufficient realization of the devastation being wrought to start something going towards their prevention. When it is realized that only a little over one per cent of Australia is under forests which are in a commercial condition, it takes little argument to show that they must stop burning up what little they have.

"The trees here are wonderful for their vitality and ability to reproduce after lumbering and a single fire. But a second fire is disastrous - and the area becomes covered with brake fern, making it useless for anything. The virgin timber - what is left - is truly magnificent, and the fern-trees alone are worth a trip here to see. The forests and vegetation are totally different from anything else in the world and are extremely interesting. Artistically the scenery is not only unique but exceedingly beautiful - it has a beauty all its own. The colorings are exquisite and wholly different from our own land.

"Aside from Nature, however, this country is very much like our own - there is nothing very distinctive in the big cities, nor in the farms. The mountains are very beautiful and quite high and cover an extensive area. They are very similar in general appearance to the Southern Appalachians. A point of great interest and surprise to me was to find eucalyptus trees growing where they have cold winters and lots of snow - where lakes freeze 22 inches thick, the thermometer gets down to 16 degrees F., and snow is sometimes four feet deep on the level. There are four species of eucalyptus growing under these conditions. I am going to bring home some seed which I collected on Mt. Buffalo from 4,500 to 5,000 feet elevation, which I want to give to the Forest Service for experiment. It would be interesting to have some planted in Washington, as I believe they would stand the winters there.

"In spite of the fact that forestry is at a rather backward stage here, it is surprising to find the great interest in the utilization of native hardwoods and particularly in kiln drying. I started a class in kiln drying, expecting about twelve or fourteen, and have over sixty."-- Melbourne, Australia, 1/27/22.

Delegation of Authority, Standards, Overhead, Etc.

by E. W. Tinker, Bighorn

Existing instructions and regulations place a limit on some of the things that a Ranger can do, but there remains a good deal of leeway, and I am confident that before any of our present day Rangers will have reached the limit set by the regulations in the bounds of his responsibility, he will have long since been taken out of the Ranger class. At least I am led to believe so by having watched the list of promotions in District 2 during the past seven years.

If it is fair to assume that the average Supervisor is a reasonably busy man, then logically he should be glad to shift some of the details of the job to the Rangers. Under our present scheme of organization it seems to me certain that he will at least not progress if he doesn't go the limit in this respect. This applies not only to the Ranger, but to every other member in the Forest organization. Further, if he doesn't load the Ranger to the breaking point with responsibility, he is not developing him nor will he be able to gauge his worth properly. However, after all, the Supervisor is responsible and he must proceed with reasonable care. Give the average Ranger 1,000 to construct a trail with and let him assume the entire responsibility for it. How many will entirely redeem their responsibility, get dollar for dollar, build the trail in all respects as it should be built and keep the accounts properly? If Bill Jones' band of sheep is running out of feed, can the Supervisor tell the Ranger to go ahead and shift allotment boundaries to the best of his judgment? These are examples of hundreds of other cases, and there is but one practical solution for the Supervisor if he is to make progress. In both cases he must turn over the responsibility to the Ranger and then if he can, by field inspection, be sure that the thing is properly done. If it is, see that the Ranger gets credit for it and, if not, that he knows of his mistakes and profits by them.

One of the keenest pleasures of the Supervisor's job is to find that a man has redeemed a responsibility placed upon him. It is true that the Supervisor probably would be playing a safer game to see to the details himself, but if he does he must lose out on the bigger things because of lack of time, and further he will never develop the men in his organization.

If all the men in a Forest organization are functioning up to the limit of the responsibility which can now be thrust upon them, the Supervisor's job certainly can be made a big one, for he has plenty of authority delegated him by the District Forester. It is simply a question of whether or not he is able to use this authority. The biggest obstacle between the ideal and its attainment probably is in the Supervisors themselves. Lack of ability to turn a piece of work over completely to some one else, simply holding him responsible for results, we are told makes a poor executive. I believe the Supervisors need assistance from the District office to develop this ability in themselves.

Overturn or lack of overturn in personnel is another big obstacle to reaching the ideal. The man who takes over responsibility and joys in it frequently is the first to go as he seeks better pay. The man who can not learn to redeem responsibility represents a load which it is at times difficult to get rid of. I presume there are other obstacles such as too much work, which to my mind compares with the somewhat hackneyed subject of the volume of office work the Rangers must assume. Let's analyze the situation thoroughly before we assume that he is handicapped by this item. Accurate and adequate records are essential in any business and the Ranger must redeem his share of the responsibility of getting and recording them. Generally the very nature of his life and work causes an inherent dislike for office work and I don't blame him for spreading propaganda against it, but as far as time is concerned let's analyze a little before we conclude that the time spent is not warranted by the results obtained.

In some particulars this factor reminds me of the hue and cry against standards on the ground of killing initiative, etc. Every Ranger or Supervisor I have talked with on the subject of standards of work wants more of them, particularly if in leading up to the subject the word "standard" was not used but rather the matter was approached by discussing such irrelevant subjects as inspection outlines, plans of work and letters of instructions. Are we in danger of killing initiative with such things? After all the standards we have ever dreamed of have become established facts, yet in my opinion in a work such as ours all the initiative in the organization will still be able to gambol across the hills without meeting any inaccessible obstacles.

Let us cut down overhead to the minimum. It is a fine ideal, but let us be practical about it. Take the organization as it is and then develop it up to the ideal if we can. Analyze the overhead and lop off some if unnecessary now, but if you are going far with it, apply a practical remedy such as stabilization of personnel and development of men.

Reducing Rangers' Office Work

By Geo. D. Russell, Lincoln

The Service Bulletin recently made another cast for contributions from the field. The Forester's comments at the Mather Field Conference on topic No. 11, "Field or office for the District Ranger," partly explains this dearth of contributions and at the same time demands a response from the field.

The Rangers would show indifference if no appreciation were elicited by this notable demonstration that our Chief is watching things on the ground floor. It is gratifying to note that he understands our difficulties and demands corrections in such unmistakable language as "All administrative officers should feel a keen dissatisfaction with any form of organization, practice, or policy which sets up office work as anything but a hindrance to the Rangers' real job."

As one of these Rangers I have wondered for some time how long it would be before administrative officers noted this vital point, the need of reduction of office work.

This burden which has been steadily growing has been accepted as necessary in the development which the Service has made. We have shouldered it as best we could and carried on. The double qualification of a practical field man and a clerical man is a rare combination. How often have I heard users remark, "I guess he could write a flowery report but he needed a bell on when he got in the woods," or "You couldn't put anything over on Smith, he could read brands and marks." They may not have known how difficult it was for Smith to make a presentable trespass report.

In reducing paper work for us, let's avoid extremes. The Ranger does not wish to be classed with a common cow-puncher or lumber-jack. It is necessary that he keep in touch with the technical and scientific elements of all phases of the work entrusted to him. To do this he should read not write.

But do not swamp him with reading that is not of direct benefit. There are possibly some of our administrative officers who have risen from the field force so long ago that they do not realize this increase of little things that call for a few minutes of a Ranger's time.

Reduce the office work and see how much better field work is kept up. There will be fewer grazing and timber trespass cases, less "cabin estimates" in 399 and grazing reports, fewer check surveys necessary in special use pasture cases, closer supervision in S-22 sales, less complaint in general from the public about red tape. As to fire suppression, I have never yet heard of a D-3 Ranger who even thought of doing any other job and getting by with it when there was a fire anywhere on his district, day or night.

The Cost of a Paper Mill

By C. W. Boyce, Washington

"We are flattered when we read despatches that Canada has enough timber for hundreds of years, that it has the greatest timber supply in the world, that the United States will soon have to depend on Canada for all of their pulp and paper and so forth, but the facts are that while we have indeed lots of wood, much of it is small and not readily accessible, being at present noncommercial, like the ice crop of the Artic."

This is the way the forests of Canada were characterized by Guy Tombs in an address under title of "What It Costs to Build a Paper Mill," given before the Rotary Club in Montreal.

It is interesting to note the point from which Mr. Tombs starts his consideration of the costs of the construction of a paper mill. He begins with the forest. The first investment must be for the proper timber limits, their protection, and means of exploitation. As he estimates, this would require the immediate outlay of about $1,000,000. The water power necessary for a 100-ton per day newsprint mill would cost another $1,000,000. All costs added together, including working capital, forest supplies, mill and power developments, etc., reach the staggering total of $10,000,000.

Truly the pulp and paper industry is big business.

* * * * * * *

Yes. 'n Go Fishin'

Why not inaugurate "For Heaven's Sake Let Us Alone Week?" Almost every conceivable week has been put over in the name of something.--Bellingham (Wash.) Reveille.

I Wonder!

By P. Keplinger, D-2

The question "Is It True?" seems to have been asked with a negative answer in mind, probably believing that a denial would make us all feel better. But Preston spoils that idea by claiming that it is sacrilegious to even ask such a question; not being content with this, Zon borrows the argument of the labor unions and claims that it is all propaganda put out by the trusts.

Although there is abundant precedent for meeting criticism in this manner, I'm wondering if it is really the best way. Why not try to find out from whence the criticism comes and why, and see if there is any way to remove it. Were this the only time such criticism had been expressed it might deserve but little attention, but it is not. Mr. Hurley, after considerable experience at the head of a Government organization, expressed much the same opinion in Collier's last summer. Le Bon, the noted French psychologist, after systematic study and investigation, arrived at the same conclusion. In fact, the idea is quite generally accepted throughout the three countries named. You know the old saying about "Where there is so much smoke--." It is, of course, true and we all know it is true to a greater or less extent. It applies more to some Government organizations than to others. It seems to apply quite well to some of our city and county officials here in Denver. It probably applies less to the Forest Service than to any other Government organization in the United States.

If this last statement is true, there must be a reason. But to claim that the reason is within us, that it is because we are different, more patriotic, more anxious to serve, or have had greater leaders would be to deceive only ourselves. Men are basicly pretty much the same in all departments. The difference is in the job itself; in the nature of the work which has been given us to do.

What are we going to do about it? Just this: We are going to find out more definitely just what it is that makes our job different; just what are the impelling motives or instincts to which it appeals; just what it is in the nature of the job that causes a man to work twelve hours a day instead of eight. And then we will make the most of it - we will make the Service still more attractive and distinctive, and the quality of service still higher. (This is the last article pro and con that will be run on the mooted question "Is It True?"--Editor)

The American Bison

By Clinton G. Smith, D-7

Some wag has said that the city of Buffalo, New York, was so named because there were no buffalo there. The published records by Dr. Hornaday, however, show that buffalo probably ranged as far east in New York State as the site of the present city of Buffalo, and the records show that they were exterminated in this region in about 1795. The line defining the eastern extension of buffalo swings southeastward near Harrisburg, Pennsylvania, to a point near District of Columbia and follows roughly the line between the Coastal Plain and the Piedmont Plateau, drawing closer to the ocean to a point near Brunswick, Georgia. There is no record of buffalo ever having been in the State of Alabama. Buffalo did range almost as far south as the Gulf of Mexico in Mississippi, in Louisiana, the line passed a point near New Orleans, along the coast in Texas, and south to the twenty-fifth parallel north, in Mexico. The line defining the westward extension of buffalo was just west of the Rio Grande in New Mexico, northward to the southeastern corner of Utah, the northeastern corner of Nevada and thence along the Idaho, Oregon and Washington line, leaving out the Idaho Pan Handle, to Canada. The northward extension of the buffalo was near Great Slave Lake.

Buffalo were exterminated, according to the best records available, in 1730 in Virginia, 1810 in Kentucky, Tennessee, Indiana, and Illinois, 1825 in Iowa and Missouri. The extermination of buffalo was most rapid after the construction of the Union Pacific Railroad, which cut the vast western range in two. No one has hazarded a guess at the original number of buffalo which ranged the North American continent. It is said that they were as numerous as the leaves of the forest and were increasing rapidly. East of the Mississippi River buffalo were not so numerous and their extermination was carried on in a rather desultory manner by the early settlers. In the Great Plains region, however, after the Civil War when rifles became numerous there was a systematic killing of buffalo for their hides and fur. Countless thousands of buffalo were also killed each year by so-called sportsmen.

The American Bison (Cont.)

In 1900, according to the census of the American Bison Society, there were only about 1,000 buffalo in the country. Now there are over 3,000 buffalo in 33 different States. There are over 100 different bunches of buffalo in the United States at present and they are increasing at a fairly rapid rate.

The Forest Service has two buffalo herds: one on the Pisgah Game Preserve of five animals, and one on the Wichita of 150 head. The Wichita herd was donated by the New York Zoological Park in 1907, and this herd has increased tenfold in the past 14 years. Distribution of thirteen surplus males was made last year and 16 head this year. In the distribution of these animals it has been the practice to restrict donations to municipalities where there are no buffalo. It was necessary to deny buffalo to four applicants who were within a region known to be infested with the Texas fever tick. Another applicant who desired a buffalo was an army officer at Fort Huchucha, who stated that a buffalo was needed for a mascot for the colored troops who are known as "buffalo soldiers."

The successful establishment of the buffalo on the Wichita and the rapid increase of the herd points to the desirability of looking beyond the goal of mere numbers. The objective should be the breeding of a strain that will breed true to the type of the American bison. This should be possible under the ideal range conditions on the Wichita, which permits the animals to graze the year round on the native grasses. This will be accomplished by culling the undesirable specimens. Eventually the Forest Service can hope to have the best buffalo herd in the country.

We can look forward to a time when buffalo will be a source of considerable revenue on the Wichita Game Preserve, since with their present rate of increase and the fact that this animal has been saved from extinction will make it possible to dispose of the surplus to individuals under a system of competitive bidding.

MATHER FIELD IDEAS

Selection of Guards

By R. N. Charlton, Angeles

On many of our Forests the work of fire prevention and suppression is left largely to Guards, and I doubt very much that we are giving the selection of these men the consideration which the responsibility placed upon them warrants. As to who should make the selection, I believe it should be a cooperative affair between the Ranger and the Supervisor and that here, as elsewhere, two heads are better than one, because the ability to size up a man is no common gift. If the District Ranger is to be held responsible for his Guards, it would be manifestly unfair to him for the Supervisor to foist upon him a man with whom he can not work in harmony, or one in whom he has no confidence, and, by the same premise, I see no reason why the selection should be left entirely to the Ranger as against the best judgment of the Supervisor. **** A Supervisor would do well to call upon his Rangers for their recommendations and then make the selection himself. Rangers should feel a keen sense of responsibility for recommending men.

To determine whether or not a prospective Guard is of the best practicable grade is no easy matter. **** First impressions may be valuable, but they should be supplemented by a study of the applicant's record.

If a man is a local resident and is known to the Supervisor or Ranger, the determination of his fitness is simple, but if he is not, I believe that in addition to an interview a regular application form in the nature of a very comprehensive questionnaire should be required and that the information given would be of great assistance to the officer making the selection.

Then again, the selection of Guards is frequently deferred until just before they are needed in the spring, and this often results in employing the nearest material at hand or in making snap judgment. **** If a Supervisor and his Rangers will start in the fall to line up the summer force, and, having a tentative line-up, make it a point to learn all he can of the applicants, I am sure we could avoid the hiring and firing system, and also secure a better set of men. **** Some good prospects apply to a Supervisor during the off season and just because it is the off season they are sometimes told to come around again in three or four months, which they may never do simply because no encouragement is given. **** I suggest that if we have had a good guard one season and we want him to return that we would do well to continue sending him news letters and bulletins and even general circulars of instruction - in fact, anything to retain his interest in the job.

If it is at all possible we should give unknown applicants a short try-out, possibly on improvement work, before regularly employing them. Judgment of a man after seeing him work is far more reliable than application blanks, interviews and references combined. **** The theory that the simplest way is to give a man an appointment and then try him out may be simple, but it is a costly one; neither is it fair to the applicant who proves inefficient and who has probably gone to the expense of purchasing an outfit. I dare say that many inefficient guards are frequently retained on duty throughout the season simply because they have gone to the expense of outfitting themselves.

I am positive that if every District officer, every Supervisor, and every Ranger were to act as a recruiting officer at all times among the men with whom he comes in actual contact, that we could greatly improve our guard personnel. ****

A wide-awake manufacturing concern in need of help sells its positions just as it does its product, and we should do the same.

About qualifications, first of all, every short term man should be made to agree to remain until the close of the season.

Secondly, if there is any choice, preference should be shown the man who seeks the position that he may gain experience and eventually become a Ranger.

Thirdly, the type of man who does not naturally like the outdoor life and isolation should be avoided.

As for the early detection of either good or poor work, that must necessarily be left largely to the District Ranger, and depends upon a close analytical supervision of his work, his diaries, and, since his principal job is fire suppression, his work at fires. **** If we do not discover the unfitness of a guard early in the season, we frequently have the alternative of retaining him or being unable to employ another for the short season remaining. **** I would require a report on all unknown guards within a month after they had entered on duty. To do so will not only give the Supervisor an idea of the guard's work, but the District Ranger is more likely to give the man closer supervision during the early period of his employment, a time when he needs it the most.

Delays are Dangerous

By Will C. Barnes

Recently a very clear-cut trespass case was referred to the Forester for action by the Solicitor along criminal lines.

So far as the evidence was concerned there was no question as to the guilt of the trespasser, who had assumed a defiant attitude in the matter and suggested to the Supervisor his willingness to have the case taken up by the courts at any time we were ready. Careful investigation into the records, however, showed that while the papers in the case were referred to the Forester in October, 1921, the actual trespass was committed during the years 1917 and 1918. Under the requirements of Sec. 1044, U. S. Revised Statutes, criminal acts must be instituted within three years after the offense shall have been committed. It was, therefore, impossible for the Solicitor's office to recommend criminal action to the Department of Justice in this case because of the statute of limitations and it had to be dropped. The record shows that there was no actual neglect on the part of the Forest officers who handled this matter which caused the delay, but in an endeavor to secure a settlement from the trespasser and thereby avoid court proceedings they had failed to note the flight of time until the case had run along for more than the three-year period.

****

East and West - On the Govt. 'Phone

Washington - "Mr.__________does not respond and I presume he has not yet reported for duty this morning."

Denver - "Nothing doing!"

The Forest Service and the Forest Schools

By W. C. Lowdermilk, D-1

The Forest Service has an obligation to the forest schools of the nation. The Service should concern itself to a certain extent with the type of instruction given in the forest schools. In most of the foreign countries special schools are maintained to give the special training to probationers in the Forest Service. The needful type of instruction and training is assured. But in the United States a rather random system of training in forestry obtains. To this there are advantages and disadvantages, possibly to the Forest Service as well as to the student. Since the Forest Service recruits its ranks in part from the graduates of forest schools, it should be interested in the type of instruction received by these graduates.

The future of the Service is profoundly affected by the ideals and attitude toward public service instilled into the minds of forest school students. No more opportune place exists for fostering the professional ideal than within the college walls. The possession of the professional ideal is perhaps more important than of information. For if a Forester does not secure a part of his compensation in the pleasure or enjoyment of doing the work of his profession, he had best keep out of the woods. He belongs somewhere else. This truth should be presented forcefully to students that they labor under no delusions on entering the work of a forester. The sustenance of the professional ideals in the Forest Service is provided for the most part by those inculcated in students by forest schools. This will be more and more true as more trained foresters enter the Service.

These comments are the outcome of the reaction gotten from giving a course of ten lectures before the students of the School of Forestry of the University of Montana.

WASHINGTON NOTES

Forestry Through Motion Pictures: A motion picture outfit mounted on a truck equipped with electric generator was sent out recently by the Pennsylvania Department of Forestry to small towns in which electricity is not available. This traveling outfit showed fire and other forestry films to 1774 children and 2351 adults during the month of February. It is understood that the truck will be run on a six months' educational schedule throughout the State.

"Indoor Sports": "I regret very much not replying to your letter of February 18th sooner, and also sorry that we were delayed in making out the Forestry Service report. We have been so overrun with Income Tax Reports, Census reports, various Government and State statistics that we have practically for the last six months been entirely out of the creosoting business and in the tax and statistical business. Creosoting has become a secondary incident. Our main function now is to furnish statistics."--From a leading creosote manufacturer.

Educational Movies: The National Nontheatrical Motion Pictures, Inc., New York City, of which Mr. Don Carlos Ellis, formerly of the Forest Service, is general manager, recently released the Burton Holmes U. S. series of educational motion pictures. Among the reels that are of interest to forests are:

1049 - Felling Big Trees in the Giant Forests of California.
1051 - The Fire Fighting Forest Rangers of Arizona.
1117 - In the High Sierras
1120 - To the Summit of Mt. Hood

"Alaska - The Last of the Frontier" - is the title of a splendid article by Col. W. B. Greeley, that appeared in the February 1 issue of OUTLOOK.

The Secretary of the Government Employees Mutual Relief Assn. reports that all claims against the association for "Flu" damages incurred at the Supervisors' meeting at Albuquerque have been settled, and that he would like to receive a flood of applications from new, healthy Forest officers.

WASHINGTON NOTES (Cont.)

Hon. Gifford Pinchot, Commissioner of Forestry for Pennsylvania, has announced his candidacy for the republican nomination for governor in the primaries to be held May 16.

The Pennsylvania Section, Society of American Foresters, held its first meeting at Harrisburg, Pa., on March 10. Thirty-one of the 39 members attended. Officers for the year are Chairman, Gifford Pinchot; Vice Chairman, John Foley; Secretary, John Ferguson.

"PREVENT FOREST FIRES - IT PAYS," will hereafter appear on all Nos. 6 and 9 white envelopes, the Forester having approved this slogan for general Service use in 1922. A circular letter was sent to District Foresters, asking their opinion as to the effectiveness of this slogan. The "storm center" of contention was the last two words - "It Pays." Districts 1 and 3 favored the elimination of these words, claiming that their use took the phrase out of the slogan class, to a large extent. Districts 2, 4, 6 and 7, however, favored their inclusion, because this added phrase gave the slogan "the necessary punch to animate it and to make it effective." District 5 stood in with D-1 and D-3, but agreed to abide by the majority decision.

In this connection it may be well to state that the Forester has in mind the adoption of an entirely different phrase as a for-all-time standard slogan for the Forest Service. This will be in the form of an indirect appeal and will appear on all stationery, forms, etc., used by the Service. It will read - "KEEP THE FORESTS GREEN."--H.

FOREST PRODUCTS LABORATORY

Kiln Drying Men Hip Deep in Snow: Laboratory folks envied for a time the kiln-drying bunch who are now in "sunny" California their theoretical enjoyment of summer weather. They now save the envy. Reporting from Susanville on February 11, Mr. Koehler said the snow in the town was hip-deep on the level and they had to stick to the shoveled paths to keep from being lost to sight. The mountains nearby were buried seven feet deep under the "beautiful."

The first course at the half-way point was quite successful, all hands working long shifts to keep it running ship-shape. In addition to carrying on the course, the Laboratory men gave close study to brown stain that occurs in kiln drying western yellow pine. Considerable degrade is caused by this stain.

Spruce vs. Hemlock: A Milwaukee firm recently submitted five wood samples to Wood Technology, of which four were identified as western hemlock and the fifth as a spruce. The company came back and courteously expressed the belief that we were wrong, as they had the opinions of a number of Milwaukee lumbermen to the effect that all five were Sitka spruce. However, Technology stuck by its guns - in this case the compound microscope. The lumber company overlooked the small but important matter of resin ducts which spruce has, but hemlock has not. Four of these specimens were devoid of ducts.

Laboratory to Study Flax for Paper: The Wisconsin Hemp Order, the Wisconsin Agricultural Experiment Association, and the Wisconsin Farm Bureau Federation have passed resolutions favoring the appropriation item of $15,000 carried in next year's laboratory budget estimates for a study of the paper making possibilities of flax straw. Over a million and a half tons of this raw material accumulated as a result of flaxseed production now go to waste each season in the flax growing belt in Wisconsin and other States west of there.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

'Bill' Fraser Resigns: After 14 years of loyal and efficient service, William R. Fraser, Supervisor of the Gunnison, has been stolen from us by the movies. Bill leaves at an increase of several hundred per cent to become business representative of his famous nephew, Harold Lloyd at Culver City, California. District 2 can ill afford to lose a man of Fraser's worth and proven ability, but must seek consolation in the knowledge that our loss is Fraser's gain.

This name "Bill" seems to have an uncanny affinity for the moving pictures. First "Bill" Hays, now "Bill" Fraser; Little Gods of Conservation, help us protect "Bill" Greeley!

Delinquent Grazing Fees: The total number of delinquent 1921 grazing permittees in District 2 at the close of business February 28 was 276, owing a total amount of $22,178.85. During the period March 1 to 9, inclusive, $3,601.42 delinquent fees for 1921 have been paid, which makes the total amount still due in this district on March 10 $18,577.43.

Who Said No Fires: Ordinarily, we don't boast of our fires, but when a Southern Experiment Station man comes along with his tale of January forest fires and subtly infers that the western districts are lucky in being free from fire worries, - well, we heave a sigh over the frailty of human understanding and just keep plugging along.

During February four fires occurred within a range of 50 miles from Denver. All were stepped on promptly, to be sure, but the point is, we are not blessed with asbestos seasons. This reminds us of the answer made by a D-2 ranger: When asked how soon the fire season would be over, "Can't tell," he replied. "I have only been in this district five years."

Carhart Lectures at Laramie: Recreation Engineer A. H. Carhart, at the request of the Laramie Council of Industry, recently lectured before that body and before the Rotary Club. The commercial organizations of Laramie, alive to the innumerable recreational opportunities offered by the Medicine Bow Forest, are laying plans for the development of these scenic wonderlands.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Poor Quercus Gambelii: Systematic botanists have decided that the tree heretofore known in Arizona and New Mexico as Gambel's oak is not Q. Gambelii, but Q. utahensis or Q. submollis. Most authorities seem to agree just at present that Gambel's oak is only a measley shrub. We all have our ups and downs.

Another County Heard From: And it has gone "recreatic." An application has just been received from the Chairman of the Board of Supervisors of Gila County, Globe, Arizona, for a permit for a recreational area at Ferndale on the Pinal Mountains. It is the purpose of Gila County to put in a camp at this point which will meet the needs of Globe and Miami. Gila County has already spent $67,000 on the highway that will open up the area and plans to spend an additional like amount to complete the road from Globe to the summit of Pinal Mt. When this road is finished it will reach a splendid recreation area for the copper cities.

Society of American Foresters: At the annual business meeting of the southwestern section of the Society of American Foresters, the following officers were elected: J. C. Kircher, Chairman; H. G. Cakins, Vice Chairman; Quincy Randles, Sec.-Treas.

Distinguished Oriental Visitor: Noted Forester of China stops over in Albuquerque for the purpose of talking forestry. Mr. Pan Cheng King, who received his Master in Forestry degree at Cornell in 1914, is returning to his country from the Disarmament Conference at Washington. He is greatly interested in everything that pertains to the work of our Forest Service. He will also make a short stop at Flagstaff for the purpose of seeing the Coconino Forest and especially the Fort Valley Experiment Station.

Engelmann Spruce: Mr. Jas. Tatum, sales manager of the Southwest Lumber Company, recently conducted a study at the local mill to determine the shrinkage in size and weights of dimension lumber from this species with the following results: The study was conducted over a period of seven weeks. Lumber immediately after manufacture from green logs fresh from log pond and cut 1/8" full in thickness and width, weight 3,237 lbs. per M. feet. After seven weeks on yard, rough, shrinkage 1/8" in thickness and 2/8" in width, weight 2,141 lbs. per M. feet. Dressed to 1-5/8" in thickness and 5½, 7½, 9½ and so on in width, weight 1,650 lbs. per M. feet.--Lincoln.

HOPELESS

Perhaps
There isn't any
Help for them,
But we hate to see them
Getting away with it
Any longer.
We refer sorrowfully
To DESIGNATIONS
Springing full-grown
From the fertile brain of
Forest Management
Even as Minerva
Stepped forth
In all her splendor from
The brow of Jove.
The other day
We got a letter
From F. M. in Washington
On the subject of
Forest fires,
And they labeled it

S
Statistics, Fires

Wholly oblivious to the fact
That there is a cute
Little designation
To cover this stuph
Under RS.
But we kept still,
Though writhing under many such,
Until we got this gem
Asking us if we wanted
Any binoculars:

S
Improvement and
!! Equipment, Fires. !!
Circular Letter

If you can beat that
We will award you the Kelley
Dresden china atmometer.

D-2 Ku Klux Klan.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Photos of District Forester Needed: Considerable disappointment was experienced on account of the District Forester being unable to come to Moab as per schedule. Supervisor Spencer, having the local Rangers fully, if not overprimed, to meet District Forester Rutledge and Assistant District Forester Mr. Simpson, rushed to meet the incoming stage and found that Mr. Simpson was alone. After all the coaching he had given his men preparing them to meet Mr. Rutledge, he had not come. As our exceedingly short Ed and the lengthy Mr. Simpson marched up the walk in enthusiastic exchange of personal salutations, a humorous youth ventured that "Mutt and Jeff are pulling one to-night." This gave Spencer a hunch with the result that Mr. Simpson was introduced to the innocent Rangers and Clerk as District Forester Rutledge, and it was not until the fourth session that the truth was let out. Moral: Every Ranger's office should be equipped with a picture of the District Forester.--Sa Sal.

Van Vleck of Jackson's Hole Visits District Office: Mr. Roy C. Van Vleck, one of the prosperous merchants of Jackson's Hole, was in the office yesterday to secure cooperation of this office on an extensive advertising campaign for the Jackson Hole country this summer. The Forest Service furnished several pictures and fire slogans for an illustrated folder.

Mr. Van Vleck is an expert fisherman, and together with some of the Forest men of the Teton National Forest, is planning an extensive fishing trip to Jackson Lake soon after the first of April, fishing through the ice for mackinaw trout.

New Chief of Public Relations: A telegram was received this morning confirming the appointment of Mr. F. S. Baker, Forest Examiner in charge of Research, to chief of Public Relations, to take the place of Mr. James E. Scott, who has been transferred to District 7.

President of Austin Chamber of Commerce: Word has just reached this office through the press that Forest Supervisor J. W. McGowan has been elected president of the Austin Chamber of Commerce, Austin, Nevada. Mr. McGowan has been vice president of this organization for the past year.

Ranger Bill Says:

Barrin' Timber Sale Appraisals, I don't know nothin' that can take the joy out o' life like an Income Tax work sheet.

I hope St. Peter ain't goin' to hold us akountable for our Service diaries.

If they take the Forest Asst. away from my station I sure'll have to buy a dictionary, said Ranger Ed. Skinner.

DISTRICT 5 - CALIFORNIA DISTRICT

Bay Cities Interested in Forest Protection: Last summer fires in the hills to the east of Berkeley and Oakland did a great deal of damage to the tree growth of the plantation which had been established at much expense some years previously. It is reported that the fires - under expert direction - would not have been productive of large damage.

Due largely to the initiative of Prof. Woodbridge Metcalfe, of the U. of C. Forest School, the East Bay cities have agreed to appropriate a very considerable sum of money to be used in building fire trails, purchase of equipment, and through cooperation with the State Board of Forestry the services of a State Fire Ranger will be available for patrol and suppression during the dangerous season. This is surely giving the dweller within the city a close-up of fire protection.--P.G.R.

Forestry News for Forest Schools: In the belief that information regarding current work and problems of the Forest Service is of interest to Forest Schools, data along this line has been compiled and sent out to these schools. This includes notes on the timber sale business; the timber survey work; timber appraisal; progress in timber marking and regulated cut; Oregon-California insect control project; minimum silvicultural requirements; seed sent Australian Forestry Commission; saving the redwoods, and Alaska paper pulp and water power. If the students and others at the schools find these notes of interest, other numbers will be issued from time to time.

Benedict Gives Lectures: Supervisor Benedict has been using the motion picture projector with films, and a stereopticon belonging to John M. Miller of the Bureau of Entomology, with slides, to much advantage. A number of slides were made showing grazing activities on the Sierra - good stock and poor, watering places, meadows - from photographs taken by Ranger Roy Boothe. These, added to a fine lot sent down by Mr. Fair, make a most interesting illustration of a lecture. At a stockmen's meeting at Coarsegold, one at Mariposa, and a third at Fresno, in late February, the films and slides were shown and explained, and on Friday evening, March 10, they were shown at Northfork for the benefit of the school children and their friends.--Sierra.

Noted Agriculturist Dies: In the death of Mr. G. Harold Powell, of Los Angeles, on February 18, the agricultural interests of this country suffered an almost irreparable loss. Mr. Powell was manager of the California Fruit Growers Exchange and a foremost exponent of cooperation in the marketing of agricultural crops. Mr. Powell, previous to his connection with the Exchange, occupied a high position in the Department of Agriculture.

News from DuBois: Supervisor Sloan was delighted to receive a letter from former District Forester Coert DuBois, who is now American Consul at Naples, Italy. Among other things Consul DuBois recalled the spectacular drive in an auto he and Sloan took in September, 1919, from San Francisco to Los Angeles, on account of the San Gabriel fire.--Santa Barbara.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Moves Up: Supervisor Brundage of the Columbia has been transferred to the District Office to assume charge of Minor Roads and Trails Projects. Mr. A. H. Wright, formerly of Lands, has been made Supervisor.

Folks on the Forests: According to forest estimates, a total of 423,637 folks sought recreation on the D-6 forests the past season. The Oregon was at the head of the line with 250,000 plus, while the Crater seconded with 42,000. A figure of 323,878 was given as the total number of automobile visitors - record sayeth not how many were Lizzies.

Movie Stuff: Ranger R. T. Carter of the Oregon Forest, who was in Portland recently, has been discovered as the "hero" of a motion picture story, "The Red Menace," filmed on his district last summer by a commercial filmer of Portland. Portions of the film were shown at the Department Club Smoker in Portland on February 1. The film has been sold to a New York concern.

"Selling" Timber Resources: Some needed timber sale publicity was given recently by the Grant County papers to the Malheur Forest's timber resources. The press of Canyon City and Burns recently ran a 2,000 word article from Supervisor Reid on the timber resources of the Forest, how the Forest Service handles the sale of its timber and the interest that local communities should have in seeing the Government receive a fair price for its products.

On Writing for the Papers: The following is from an editorial in the Portland (Oreg.) Evening Telegram of recent date and might well be borne in mind by most forest officers when writing for publication:

"When writing to a newspaper, first have some really live thing to say, then say it as if you were alive. Boil it down half, throw away half the remainder, and after careful revision send the other half. Otherwise your communication is likely to be condensed with a long horn shears or ditched. But if you have something worth reading, no agency is more glad to get it and print it than a live newspaper."

DISTRICT 7 - EASTERN DISTRICT

Back to the Woods: The backwash of the labor market is still flowing and flotsam is drifting to the hills and trails of the White Mountain National Forest, if applications for work can be taken as a barometer. Sixty-eight inquiries for summer work have been received up to March 13 from men and boys who include one M. F. graduate of Harvard and a one-handed woodsman who claims he can do any kind of woods work except build a log cabin.

The sixty-eight applicants represent twelve States. The youngest applicant was 16 years of age and the oldest thirty-eight. Fourteen are graduates or students of forestry schools; seven are graduates or students at ranger schools. Sixteen attend high school and one is a doctor. Yale, Harvard, New York State College, University of Idaho, Michigan, Pennsylvania, and New Hampshire State College forestry courses are represented on the list. Not a few are north-country woodsmen. Boy Scout enthusiasts and some New York City apartment-house dwellers are booked. One writer admits he wears glasses, but can see just as good without them. There is not a horse in use on the Forest, but one "lover of the outdoors" drives home that he was a teacher of equitation at a boys' camp. One lad, whose enlistment in the marines will soon expire, writes that he can "handle a canoe first rate."

Since O-Personnel is rated to be the hub of the Forest Service wheel, there is no doubt that the sixty-eight applicants will receive some serious consideration before the wheel commences turning next fire season. Three distinct layouts will probably be put on the table before choice of men is made. They are: 1922 Work Plan for each individual district; (2) Topics 19, 20, 21, and 22, of the Mather Field Conference report; (3) the individual applications of new men and records of old men seeking reemployment.--E.F.S., White Mountain.

Progress of Purchase Under the Weeks Law: The appropriation for the purchase of lands is practically exhausted and the prospects for an appropriation by Congress for the coming fiscal year are not at all bright. The Bureau of the Budget has recommended only $50,000 and this is barely sufficient to complete the work that we are obligated to do in order to consummate the purchases that are under contract.

A review of what has been accomplished during the life of this work is interesting. The total amount of money appropriated since the beginning of the work has amounted to $12,617,320.76. The Bureau of the Budget withdrew from this $112,556.00. We at present have available for purchase $229,302.39, all of which will be obligated before the close of this fiscal year, principally through purchase in the Allegheny Purchase Unit.

The average cost of lands acquired to date has been $5.11 per acre. Eighty eight cents per acre has been expended to consummate the deals which includes cost of appraisal, surveys and title examination.

In view of the very exacting requirements by the Department of Justice as to title and the thorough manner in which the appraisals and surveys are made, this cost is considered a satisfactory one. Up to this time 2,047,718 acres of land have been approved for purchase by the National Forest Reservation Commission, and most of it has been paid for.

DISTRICT 8 - ALASKA DISTRICT

Forest Service Towns: The town sites of Tenakee, Craig and Hyder were eliminated from the Tongass Forest on January 1. This action which was taken on the recommendation of the Forest Service will permit the residents to apply for patent to their holdings under the general town site laws. At the present time the lots are occupied under a system of leases providing for the payment of a nominal annual rental.

In 1914 the Forest Service surveyed the town site of Tenakee into streets, blocks and lots, and a short time later constructed 3,660 feet of plank streets as an aid to the development of the town. It is now a thriving little community with good houses, gardens, stores, and a school. It has one of the best known hot springs in Alaska.

Craig was founded in 1912, and is now the center for the entire West Coast, having in addition to the cannery a modern sawmill, good stores, school and docks. A number of years ago the Forest Service surveyed over 200 lots and built 2,100 feet of planked streets in Craig. Many of these lots are now occupied by residences and business buildings.

Hyder, at the head of Portland Canal, was started on the Lindenborg homestead, but this proved inadequate in size, as the population has grown very rapidly in the last few years. To provide additional home building space, the Forest Service subdivided an adjacent area into 208 lots. A good wagon road built by the Territory of Alaska and the Forest Service from Hyder into the Salmon River mining country, a distance of 11 miles, is proving of good value in developing the town.

These three towns are now permanent settlements and without doubt the residents will apply for town site patents and then institute local town government.--M.L.M.

Ranchers Using Fuel of the Early Days

By Fred R. Johnson, D-2

When the early settlers drove their schooner wagons through Kansas, Nebraska, and eastern Colorado, then known as a portion of the "Great American Desert," to the mining camps of Colorado, it was necessary for them to use buffalo chips for fuel when the caravans stopped each evening for supper and a night's rest. Later, as settlers filed on the choice pieces of land for their future ranches and farms and built their sod houses, this kind of fuel was commonly used, unless they happened to be located close to a river valley which contained a growth of cottonwoods, willows, green ash or other hardwoods.

With the development of the country and the ranching industry, the settlers became more prosperous; frame houses replaced the "soddies," and coal was hauled in from the nearest railroad point for the winter's supply of fuel. There were many ups and downs in the ranching business, but 1917, 1918, and 1919 were prosperous years for the stockgrowers. Many stockmen expected the high prices of sheep and cattle to continue, and borrowed large sums of money to stock their ranches and erect improvements.

In the summer of 1920, when the Federal Reserve Bank began to call in its money, it became necessary for the country banks to demand payment on their loans. At the same time the price of cattle dropped so that ranchers, after feeding cattle over winter, were forced to sell their stock at prices much lower than they had paid for them. A drought during the summer of 1919 caused a short hay crop and this was followed by a very severe winter, during which many ranchers ran out of hay and were forced to pay as high as $40 a ton where it was available. Prices of cattle continued to drop during 1921 until they are now back to pre-war figures; hides do not bring enough to warrant shipping, and wool sold, during 1919 and 1920, for less than the cost of production. The country banks continued to press the ranchers for payment on their loans so that, with the other conditions prevailing, many ranchers are now practically broke.

In an automobile trip of 300 miles taken recently through western Nebraska by several members of the Forest Service, it was estimated that there were only half as many cattle now as ten years ago. On many ranches there are so few cattle that most of the hay put up in 1920 was not fed, and in many meadows the 1920 and 1921 stacks of hay can be seen. Some ranchers did not cut their hay, as they had no cattle to feed. The region referred to is too far from the railroad to bale and ship the hay.

As a result of hard times dozens of ranchers do not have any money to buy high priced coal, and so have gone back to the fuel of the early day settlers. At many ranches passed on this trip, stacks of cow chips were located close to the house for use as fuel this winter. This condition is true all through western Kansas and Nebraska and eastern Colorado, and as the farmers to the east of this ranching region are burning corn in preference to high priced coal, its effect upon the Colorado coal mining industry is evident in closed mines.

The Forest Service is advocating that each rancher in this region plant from five to ten acres of trees adapted to the locality. The Service is prepared to advise as to the species best suited and the methods of planting. A woodlot of this size would form a continued source of fuel and repair material for the varied uses of a ranch, and also it could be planted so as to shelter buildings or feed lots. In hard times such as this, ranchers would then have a more desirable fuel to use than the crude fuel of the early days.

Service Bulletin
U. S. FOREST SERVICE
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(Forest Protection Week and Golden Anniversary of Arbor Day - 1922.)

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

WHEREAS, the protection and perpetuation of our forests are vital to our continued industrial welfare and national strength, and to our individual health, comfort, and prosperity, and

WHEREAS, a period of fifty years has passed since, in April, 1872, there was instituted in the State of Nebraska observance of a day especially set apart and consecrated for tree planting, and known as Arbor Day, and

WHEREAS, both through widespread annual celebration of Arbor Day and through the increasing observance of Forest Protection Week public attention has been commendably directed to the value of trees, the unnecessary waste of our diminishing forests through preventable fires, the deplorable effects of forest devastation, and the need for remedial measures against depletion of an essential natural resource:

THEREFORE, I, WARREN G. HARDING, President of the United States, do urge upon the Governors of the various States to designate and set apart the week of April 16-22, 1922, as Forest Protection Week, and the last day of that week, April 22, as the Golden Anniversary of Arbor Day, and to request officers of public instruction, of counties, cities and towns, and of civic and commercial organizations to unite in thought and action for the preservation of our common heritage by planning such educational and instructive exercises as shall bring before the people the disastrous effects of the present waste by forest fires, and the need of individual and collective effort to conserve the forests and increase our tree growth for ornament and use:

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

(SEAL.) DONE at the City of Washington this 31st day of March in the year of our Lord one thousand nine hundred and twenty-two, and of the Independence of the United States of America the one hundred and forty-sixth.

WARREN G. HARDING.

By the President:

Charles E. Hughes,

Secretary of State.

From Whence Cometh This Noise?

By C. M. Granger, D-2

Very much hue and considerable cry have been raised about the overpowering, crushing amount of office and paper work Rangers have to do. One enthusiastic member of the Washington office virtually advocates sinking the Olivers without a trace and letting Ranger Bill do his letters and reports in manual script, making whatever copies are needed by means of carbon paper. It is also suggested that the aforesaid R. B. could write many of his reports in the field on notebook sheets and send 'em to the Supervisor's office just like that, where, if really needed, they could be copied by the lady stenog, and so on, ad in-and-fightem.

To a not-yet-alarmed and innocent onlooker most of the viewing with alarm seems to come from above. Perhaps the ear of the writer has not been close enough to the earth, but he has not yet detected any concerted dull roar from the masses who do this burdensome typewriter-tickling and map-modeling. True, there have been occasional outcries from individuals. In the March 20-27 issue of the Washington Bulletin Brother Russell promises a heap more time in the brush if the office work is curtailed, but he does not say what nor how. A good many studies have shown that usually (there are exceptions to strengthen the axiom) the Ranger who has the busiest district is the one who spends the least time toying with the Oliver, while the one who hasn't enough territory or business to keep him humping puts in more shifts in "miscellaneous office work" or "cleaned up around headquarters."

Just why haven't we heard more universal and specific complaints from the Ranger Bills? Is it because he has accepted the office work as inevitable, or because he likes a little time at home even with that distasteful burden while there, or because he thinks a yell will bring down higher-up wrath on his head, or is the burden of office work overemphasized from above? If it is a real handicap the victim ought to be able to point out specific ways of relieving the trouble, specific things that ought to be cut out. The writer is not at all sure but that there is really something to kick about, but he would like to know specifically from the burden-bearers just what it is. From whence cometh this noise?

The Washington Photographic Laboratory

By C. A. Kolb, Washington

The following description of the various classes of work for which the Photographic Laboratory in Washington is equipped will be of general interest in the Service, since photography is necessary in many lines of our work. It is very essential that all regulations applying to this work be observed, since the demands upon the laboratory are continually increasing while the personnel remains the same and the funds for photographic supplies are more difficult to obtain.

Photographic Wet Plate Process (glass negative): In the wet plate process the photographer sensitizes a sheet of blank glass by means of collodion and nitrate of silver. This negative must be used while it is moist, since it loses its sensitiveness when dry, hence the name "wet plate."

This process gives the best quality of prints for the reproduction of maps and drawings. It is, however, the most costly and should be employed only when a change of scale is desired or when it has been impracticable to use for the original drawing either tracing cloth or a material which can be transparentized.

To avoid duplication of work and additional expense, all prints desired by a District should be requested at one time, as it is impossible for the Washington office to retain the glass negatives for any length of time owing to the weight, bulk, fragility and cost of material.

Prints from glass negatives can be made in one piece up to 28 x 34."

The cost by this process per sq. ft. is: negative, $.80; print, $.07.

Van Dyke Process (paper negative): This process is more economical than the wet plate process whenever prints on the same scale as the original drawing will suffice. It will not produce as sharp a print as the glass negative, but it has the advantage that it can be filed readily and retained for an indefinite period for the purpose of making duplicate prints. If a change of scale by the Van Dyke process is desired, it is necessary first to employ the wet plate process and then make from the reduced or enlarged glass negative a paper negative. This process involves the cost of both the wet plate and Van Dyke negative. Van Dykes can be made in one piece up to 40" in width, any length.

The cost by Van Dyke process per sq. ft. is: negative, \$.04; print, \$.04.

Blueprint Process: As this process is more economical than the foregoing, it should be used whenever prints on the same scale as the original tracings and transparent paper drawings are desired and where a white background is not necessary. Blueprints can be made in one piece up to 40" in width, any length.

The cost of blueprinting is \$.03 per sq. ft.

Photostat Process: This process can be used as a substitute for the foregoing processes in many instances where the size of the print comes within the limits of the machine and where great accuracy of scale is not necessary. The photostat machine in the Washington office can print a sheet 18"x21." It can not enlarge in excess of one-fourth of the original. It can reduce at one setting of the camera to one-fourth of the original scale.

The cost by photostat process per sq. ft. is: negative, \$.09; print, \$.09.

Photo-view Work: Photo-view work consists of developing, printing and enlarging pictures taken in the field. The work is carried on more economically if the pictures taken in the field are of standard size and do not require enlargement. The cost of printing from standard size negatives is \$.065 each. The cost of printing from negatives which have to be enlarged is \$.30 per sq. ft., or fraction thereof.

Bromide Enlargements: Bromide enlargements are made of pictures for exhibition and decorative purposes; of diagrams and illustrative matter for lectures, and of enlargements for the purpose of inking-in and bleaching-out to prepare line prints instead of half-tones.

Prints by the bromide enlargement process are made on any scale by projection from a negative. The images are thrown upon sensitized paper where they are developed and fixed. The difference between this process of printing and that of printing by the wet plate process is that the wet plate print is made directly from the glass negative and necessarily upon the same scale.

Bromide enlargements can be made in one piece up to 40" in width, any length.

The cost of bromide enlargements is \$.30 per sq. ft., or fraction thereof.

Lantern Slides: Lantern slides, uncolored, are made at a cost of \$.21 each.

Transparencies: Uncolored transparencies are prepared at a cost of \$.90 per sq. ft. Owing to the shortage of funds for photographic work and supplies, work of this kind has been discontinued during the remainder of this fiscal year.

Map Mounting: All kinds of maps are mounted on cloth, either in one piece or in saddle-pocket or coat-pocket form.

The cost of mounting is \$.05 per sq. ft.

The limit of the mounting board is 72" x 84," although several sheets of maximum size can, after mounting separately, be hinged together by an overlap of cloth.

Photo-view Mounting: Photo-views are mounted on cardboard at a cost of \$.046 apiece.

Negative-cutting: By means of negative-cutting the lines of the glass negative may be improved or simple additions may be made to the negative, or portions of the negative may be permanently stopped out so as not to print.

Photo-lithographic Process: Photo-lithography is a combination process of photo-printing and press-printing. By means of photography, negatives are made of the original drawings upon any desired scale and transferred to the plate for press-printing; printer's paper and ink being used and not sensitized paper as in the case of photo-printing.

This is usually more economically employed when the number of prints exceeds 30, but this is not an invariable rule, as much depends upon the nature of the work and the size of the sheet.

General: In planning photographic work it is well to know that gray does not photograph satisfactorily, and that to produce good prints all lines of a drawing should be thoroughly black and unbroken. The draftsman, therefore, should use ink as thick as practicable and in cleaning a drawing should avoid causing wear to the lines.

Photographic prints from drawings made with inks of various colors are not satisfactory and are often illegible.

Blue does not photograph well. All of the other colors photograph in varying shades of gray or black, more or less smudgy. Deep orange gives the most satisfactory black print except black.

1921 Law Enforcement in D-1

By P. J. O'Brien

From February 23 to 26, April 23 to June 8, June 22 to 25 (54 days), I spent visiting prosecuting attorneys, justices, United States Commissioners, sheriffs, Forest officers and editors and other citizens from whom the Service was seeking assistance in its law enforcement program. In all I conferred with 240 law enforcement officials in Montana and Idaho.

These conferences were worth while, since many erroneous notions were dispersed and much information furnished to state and county officers on Service aims and policies. I was much surprised at the limited knowledge possessed by those men of Forest Service activities. All of the officials that I met were cordial and seemed anxious to be of service. In a few places where the officers had been listed by Forest employees as unfavorable to our program the best results have been secured during the season of 1921.

The number of individuals prosecuted successfully in the State courts during the current year reached 100. Fines collected amounted to $3,254.00.

Eighty-nine of the trespass cases initiated were for violations of the fire laws. Eighty of these were handled under the criminal side of our procedure. Six were dropped for want of sufficient evidence. Complaints were filed against 72 violators of the fire laws and 66 of these were convicted. It will therefore be seen that we were a little better than 93 per cent successful in these criminal prosecutions.

About 40 game trespass cases were prosecuted during 1921 with the same relative degree of success as in the fire trespass cases.

We had in this District, according to the statistics, 157 incendiary fires. Of this total 87 were in the vicinity of Pinkham Ridge on the Blackfeet and Kootenai National Forest, and 37 were located in the northern part of the Pend Oreille National Forest; in other words, 124 of the entire number were in the northwestern portion of the District. The Lolo National Forest reported 13 and the remainder were segregated among 7 Forests.

Throughout the season a campaign of publicity of fire and game law enforcement was in force. Strenuous efforts were made to keep before the public the names of those prosecuted and the penalties imposed by the courts. Each Supervisor furnished the local papers in his region with the news and the District Office acted as a kind of distributing agency.

Ranger Bill Says:

My idea of a true friend is a feller that don't smoke but always has a match to lend 'ya.

Next to a cavalry harness on a pack mule, I don't know nothin' that beats the fit of my new uniform.

I'm goin' to use a lot of Mather Field ideas this summer if I can catch some of them fellers out on a big fire.

"Put Out Your Fire" - A Boomerang

The old saying "What's one man's meat is another man's poison," is as true for forest fire propaganda as for anything else. This fact was strikingly brought home to one of the State Foresters in the South recently. He needed some fire posters, and, not having the time to study out some slogans for himself, selected several which had already been successfully used elsewhere. One of these selections was, as quoted above, "Put Out Your Fire." A very generous supply of a striking red and buff poster displaying the above slogan conspicuously was forthwith procured. Many of these posters with others were soon decorating the landscape preparatory to the opening of the spring fire season. Now, it happens that the opening gun of the season in that particular State is fired by the unregenerate cattlemen who "put out fire" to "improve" the range. The State Forester woke up when some wise one tipped him off to his very attractive poster inviting the continuance of this nefarious practice. And now this batch of posters is gathering dust and can doubtless be bought at bargain prices.--L.S.M.

MATHER FIELD IDEAS

Protection and Finance

By Joseph C. Kircher, D-3

1. How far should absence of fires be recognized in allotting funds for protection and distribution of funds?
2. How can we be sure that funds for protection are allotted properly between districts and forests?

1. The need for fire protection is dependent upon two things - hazard and risk.

(a) Hazard is the chance or probability of destruction of forest values as a result of exposure to fire. It is largely inflammability caused by material on the ground, dryness of material, wind, other weather conditions, etc. Hazards can be broadly classified by timber types and ground cover. Thus, in D-3 the following broad classifications would suffice.

1. Woodland type - practically no hazard.
2. Oak brush type - fairly high hazard.
3. Yellow pine type with short grass - fairly high hazard.
4. " " " " bunchgrass - highest hazard of D-3.
5. Douglas fir -" - fairly high hazard.
6. Alpine type - practically no hazard.

These classifications are based largely on the amount of inflammable material on the ground, although to some extent on the dryness of this material. For instance, there is more material on the ground in the Douglas fir and alpine types than in the yellow pine type, but most of the time it remains so damp that it will not burn. If ever it does dry out the hazard here is tremendous, but this is an emergency and need not enter into the present discussion. The thing which is not definitely known is the relative normal hazard of the different types. This must be studied in order that a more equitable distribution of protection may be secured. But, in some localities even where the hazard is high, one finds an absence of fires in the past. This is due to the absence of risk.

(b) Risk is the chance or probability of fires starting, and is determined by the presence or absence of causative agencies. Risks can be readily classified because they are definite. Lightning, sawmills, campers, etc., for instance, are examples of definite risks which can be guarded against. Many risks can be definitely located as, for instance, sawmills, and railroads. Even lightning risks can probably be fairly definitely located in the Southwest, where preliminary studies indicate that they occur in zones. There are some risks, however, which can not be definitely located, such as smokers who may set fires anywhere in our open forests of the Southwest. These are the risks which cause the most trouble and are the hardest to control. On the other hand, when it is definitely known that there is no risk in a certain locality, protection is not needed.

The occurrence of fires is the indicator of risk and hazard and, therefore, the best index as to the need for protection. A study of the location of past fires will indicate closely where and to what degree protection is needed. In fact, the need for protection under normal conditions could be absolutely based upon the occurrence of past fires, were it not for the fact that risks change from year to year and some can not be definitely located. In determining the fire protection for an area, first consideration should be given to the location of past fires. Areas where fires have occurred must first be given protection, provided that the risks causing these fires still exist. Next, the presence of new risks or the change in location of risks must be considered. And lastly, because there are some risks which can not be definitely located, protection (possibly only to the extent of detection) must be given to all areas where sufficient hazard exists to justify protection, even though fires have not occurred. Protection, however, need not be given to areas where it is definitely known that no risk exists.

The answer to the question "how far should absence of fires be recognized in allotting funds for protection and distribution of funds?" is in my opinion answered as follows:

Where it can be shown that areas which in the past have had no fires, do not now contain risks, no funds need be allotted.

Where this can not be shown, such areas should receive protection in accordance with their relative hazard, unless it is definitely known that there are new risks there, in which case added protection may be necessary.

Where fires have been and are occurring, showing the presence of risks, allotments must be augmented in order to take care of them.

2. In alloting funds for protection, the following facts must be taken into consideration:

1. Relative hazard. This will require a good deal of additional study. It is, however, probably the largest single factor, especially when all the National Forests are considered.
2. Risks.
3. Acreage to be protected.
4. Cost of detection. In one locality, because of topography or for other reasons, it might be necessary to use a great many more lookouts than in another of like hazard.
5. Cost of suppression.
6. Resources to be protected and their value to local welfare.

A study of these factors will, in a broad way, establish the relative allotment needs of various localities. A close knowledge of field conditions, based upon such studies, should determine the proper allotment of funds between forests. This can best be accomplished in each District by thorough inspection, preferably by one man who is specializing on fire.

Thus, also, the Forester may determine the proper distribution of funds between Districts, through inspection by a fire expert.

Less Theory and More Work

By C. F. Evans, Lemhi

Mr. Preston's article in the March 6 issue of the Service Bulletin will meet the approval of many members of the field force. It requires considerable courage to come right out into the open and challenge the worth of a new idea or plan because it means stepping upon some one's toes, and the critic lays himself open to the charge of being a reactionary or of voicing destructive criticism.

I assume that there will be no argument over the statement that we must improve upon our past record of accomplishment. Will this improvement come through a stricter adherence to standards, specifications and plans? Possibly, but in my judgment, these can be only contributing factors and by no means the most important ones at that. Let me add that I am strongly in favor of plans as an aid to securing the proper use of time and money. To this end they should be more simple and usable than anything that has been generally adopted to date. The trouble with most of the plans that have been tried heretofore is that they have attempted to prescribe for the expenditure of every hour in every day in every month, and, in the resulting muddle, the field man (I am not thinking only of Rangers) lost sight of what should have been his main objectives. As a consequence, he attempted to follow the plan with machinelike precision or else chucked the whole mess and struck out with his own horse sense and judgment as a guide.

Sometimes the Supervisors and Rangers have been charged with being overconservative and resistant to new ideas and changes in methods of doing their work. I do not believe that this charge can be substantiated. What, then, makes us appear so skeptical of the new schemes which with monotonous regularity keep coming along from time to time? Bear in mind that it is on the Forests that these schemes prove their right to live or die. The explanation of this "show me" attitude lies in the fact that the man on the ground knows from past experience that entirely too many ideas were not carefully thought out before being adopted and as a result were unworkable and soon forgotten, giving way to new issues. Over a period of ten years, I have watched them come and go (there is a new one in the offing at this moment, I judge from the signs) and the reason that they do not survive the test is not because of the vast inertia of the field force, but because the theories themselves are not based upon the hard facts of the situations confronting us. What we need right now above all things is a year or two of hard work for every one. Declare a holiday on new theories and plans and set aside a No-New-Issues-Year. At the end of that time if we are caught up in the application of what we already know, let's consolidate our positions and then map out a new program of advancement, always holding to simple, clear-cut objectives.

The most obvious fact in the present situation is that out on the Forests where the plans and policies are being executed, the men in charge are several years behind in the application of the ideas handed down from up the line. Too much of the good material sent out has not been digested and assimilated, to say nothing of being put to practical application. The average man (this class comprises, roughly, 95 per cent of us) is confused, dazed and dumfuddled. Probably we need training and there will be some to aver that we need inspired leadership. Assuming that we need both, doesn't the remedy lie in closer contact on the Forests between the District and Washington offices on the one side and the Supervisors and Rangers on the other? I think so. No amount of conference in Washington, Denver or San Francisco will solve this particular phase of the problem and thereby narrow the wide gap now existing between the advanced ideas of the higher-ups and the actual accomplishments of the men on the Forests. Make no mistake about that.

I am now ready to suggest a program:

1. A "closed season" on new plans, schemes, issues, hobbies, and whatnots.
2. A year or two of hard work, concentrating on well defined objectives not too far ahead of our present position.
3. Assimilation and practical application of the workable ideas now in our possession.
4. Less conference around the table and more conference out on the ranger district.

Wild Life Notes

By Smith Riley, Washington

Wanted, A Game Utilization Plan

Comes now the Kaibab Forest, the first to report game animals in such numbers that they are damaging the Forest ranges regardless of the steady reduction of domestic cattle and sheep, to provide for the deer and relieve excessive grazing. As the bucks are greatly in excess of the does, the Supervisor advises taking 500 buck deer in those localities where the congestion occurs.

As the National Forest game becomes plentiful in the extensive range areas, efficient and effective utilization plans are going to be of first importance. If possible, the public should be given the pleasure of taking this game by hunting. Certainly in the larger range units where the year's habitat of the animals is included, overflow to adjoining lands will not take care of the increase unless there is some agency outside the animals' own volition to stimulate movement away from congested areas. Going into the Kaibab along with 499 others to shoot a buck deer would be much like shooting a beef. And yet, if a certain number of animals was taken there each year, the chances are that the alertness of the animals and the extent of their range would be increased by a limited amount of hunting. Sell the licenses at a nominal figure to the first applicants on a given date and give the hunter a limited number of days to do the hunting at that time of

The occurrence of fires is the indicator of risk and hazard and,

tions for future development and range consumption.

Game - A National Problem

Some one has said that the game is the product of the forest lands, and that domestic stock is a product of agriculture and those lands in cultivation. The amount of domestic stock which can be produced depends upon the available land to produce winter feed. After game has been provided for in the amount demanded by the public, such unutilized range that exists in the Forests outside the game needs will be allotted to domestic stock use. That our forest wild life be given full consideration appears most justifiable when we consider the findings of the court, as voiced through Mr. Justice Holmes in considering the migratory birds and the treaty act relating to them, in Missouri v. Holland, 252 U. S. 416 decided April 16, 1920: "Here a national interest of first magnitude is involved. It can be protected only by national action in concert with that of another power. The subject matter is only transitorily within the State and has no habitat therein. But for the Treaty and the Statute there soon might be no birds for any power to deal with. We see nothing in the Constitution that compels the Government to sit by while a food supply is cut off and protectors of our forests and our crops are destroyed. It is not sufficient to rely on the States. The cause is vain and were it otherwise, the question is whether the United States is forbidden to act. We are of the opinion that the Treaty and the Statute must be upheld. Cary v. South Dakota. 250 U. S. 118."

Dam Construction and Fish Culture

By Will C. Barnes

That there are always two sides to any proposition is well illustrated by the results of an investigation into the effect on the supply of fish of a dam erected in the Madison River in Montana.

Some years ago the Montana Power Company placed a dam known as the Hebgen dam, in the Madison River. In building this dam the power company, appreciating the fact that it was going to be impossible to construct a fish ladder which would enable the fish to pass up and down the stream for spawning purposes, agreed to build a hatchery above the dam at their own expense so that the supply of fish would be continued. The hatchery was built and operated by the State until about two years ago, when it was demolished by a snowslide. In the meantime, the fishermen of the State have raised a great outcry over the barrier which the dam formed against the free movement of the fish up and down the river. The power company agreed that whenever a design for a practical ladder was furnished them they would be very glad to build it and maintain it so that the fish could pass over the dam and into the lake above. Such a ladder, however, has never yet been found.

The Forester has been repeatedly appealed to, through members of Congress and sportsmen in the West, to take some steps to remedy the situation, but of course in view of the character of the dam and the inability to secure plans for a ladder that would be workable, nothing has been done.

The Commissioner of Fisheries in Washington caused an expert survey to be made of the Madison River and the effect of such dams upon the fishing in that and other streams in which dams have been built for power purposes. The following extracts from this report are furnished, as they are of general interest:

"Personally and officially, we all deplore the great loss of fish, but more particularly of the eggs of these fish which annually put in their appearance below these and other dams in Montana in an unavailing search for suitable spawning grounds. We realize, however, that this water is more valuable for irrigation and power purposes than for fish cultural use, hence our efforts toward conservation are necessarily conducted along educational lines and in cooperation with the water users of various kinds. Much is being accomplished along these lines."

"The primary impression of the effect of these dams depends largely, if not entirely, on whether they are made from below or from above the dam. If from the former viewpoint, the unavailing efforts of the fish to ascend to a suitable spawning ground is a sight to make one heartsick. If, however, the vision is from above the dam, one sees miles of splendid new lake and covering hundreds and thousands of areas of splendid meadow land which, when inundated, provides practically unlimited range and food for adult fish. In such lake reservoirs the increase in the quantity and quality of the native and introduced fishes is simply marvelous."

The writer goes on to say that, since the establishment of these reservoirs, the fishing in this river has never been as good as at present; the fish, not only the natives but introduced species, have rapidly increased, and as a broad proposition, the loss which has followed the inability of the fish to get over the dams to reach their old spawning ground has been more than made up by the addition of new spawning and feeding grounds, created by the dams. This is a valuable point to consider when the creation of such dams is under proposal and, if the results of this investigation of these dams in the Madison River are to be accepted as establishing a general rule, then their construction can be justified, even though there is an apparent damage to the fish through their inability to get over the dam.

Delinquent Grazing Fees

The following table shows the number of delinquents and amount due for the six districts as of March 1, 1922:

District	Number of delinquents	Amount due
1	116	$9,170
2	276	22,178
3	474	95,800
4	664	35,048
5	27	2,375
6	158	9,751
Total	1715	$174,322

The amount averages a little over $100 per delinquent. For the State of Arizona alone the number of delinquents was 279 and the total amount due from them $79,479. The stockmen in the State of Arizona, therefore, owe the Federal government almost one-half of all the delinquent fees for the season of 1921.--W.C.B.

WHAT SAY? - Ye Colorado Lions

Yes, the mountain lion does scream, or to me this scream has always sounded more like the clear clean-cut call of a woman. With the exception of the months December to February inclusive, I have heard them call in every month of the year, usually in the evening and early night. This call can be heard for a distance of several miles when atmospheric conditions are favorable, and is particularly clear and penetrating when heard at close range. One who has ever heard this call and known its source will never tell you that a mountain lion does not scream, for it automatically quickens your pulse and advances the spark of alertness.--Stephenson- White River.

Mountain lions do not scream. For forty years I have led an out-of-doors life in the foothills and mountains of Colorado; always in localities where lions were more or less plentiful. I have hunted and killed lions, have seen them captured alive and packed on horses, but I have never heard a lion scream. I have talked with famous hunters, men who have hunted, captured, and killed lions throughout the mountains of the western States, and none of these men claim that they ever heard a lion scream. The high-pitched snarling squall, sometimes heard in the woods, or in wild out-of-the-way places, is made by the red fox. It is this harsh piercing "squall" of the fox, that nature-fakers and tenderfeet hear and believe to be the scream of a lion.--Loring- San Juan.

SOCIAL LIFE ON THE TRINITY

By
O. Reese
(A local resident, Weaverville, Calif.)

We paid a visit, me and Chuck,
To Bob Lee, up on Pony Buck.
Chuck's my pardner; him and me
Has paired the trail since '93;
And all them years I never heard
Chuck Matthews waste a single word.

Last winter I remarked one night,
"It seems to me we ain't polite.
Bob Lee, ten years ago last fall,
He comes down here and makes a call.
'Pears like it's up to us to make
A visit for good manners sake."
"Ugh?" says I;
"Shore," says Chuck,
"We must call at Pony Buck."

Now that long argyment, you know,
Was mighty wearying; and so
It wasn't until late July,
(Our sluicin' ditch was runnin' dry,)
That I reminded Pardner Chuck
About that call at Pony Buck.

But when next day we heaved a sigh
For our old camp and said good bye,
Our conversation took a cramp
That lasted plumb to Bob Lee's camp.
We saw Bob Lee a settin' there,
A scratchin' aimless in his hair.
"Ha'r," says I;
"Ha'r," says Chuck;
"Ha'r," says Bob of Pony Buck.
Then we sat down on the ground
And spit a lot and looked around.

Along 'bout-noon, Bob says, says he,
"It's time for grub pile, seems to me."
And then we labored silent through
The biled pink beans and towhead stew;
And then we sat down as before
And smoked and spit and looked some more.
"Ugh," says I;
"Ugh," says Chuck;
"Ugh," says Bob of Pony Buck.

It was a month ago that we
Went up to call on old Bob Lee;
We ain't talked since, until to-day,
When Chuck got garrulous, some way,
And heaved a sigh and muttered, "Well,
This social life is shorely h--l."

(First published several years ago in a D-5 bulletin.--Ed.)

Waterproof Telephone Bo quest of the Southwestern District, has designed and built a sample housing box for exterior installations of standard wall set telephones No. 1317-5. The box was built with an eye to lightness, strength, and water resistant qualities. Plywood glued with blood albumin glue was used for the material and a special water resistant paint employed as a coating. The results in use will be of general interest.

An Eighteen Months Bath: Preliminary data on 193 airplane propellers passing through tests in the Laboratory humidity chambers indicate that red oak and central American mahogany will stand 18 months in an atmosphere of 90 per cent humidity before showing evidence of open joints between the laminations. Under this same rough treatment, red gum, white oak, yellow poplar, hard maple, yellow birch and "African mahogany" begin to open at from 10 to 14 months, while "Philippine mahogany" yields at 5 months. These preliminary values may be changed in the final analysis.

A Bit Off, Geographically: A correspondent recently sent a specimen of wood of which he said, "It is supposed to have come from Russia. During the war a Russian firm had a contract to make panels for England and after the war the surplus stock of their wood found its way to this country." The wood was identified at the Laboratory as a specimen known by several names: "Okume," "Gaboon mahogany" or Liberville mahogany" --- not from Russia, but the French Congo, Africa.

Larch Butts - and Baking Powder: "It has been customary in the West to leave butt larch logs in the woods. This is due to the fact that the butt is heavy and is unsuitable for making a commercial lumber product. We find that 15 per cent of this butt log is a chemical product called "galactan." We believe that we can bring all of these butt logs and all the waste from the larch trees to a factory, make wall board, craft paper, roofing or insulating felt from the waste portion of the log and that we can leach from the chips as they are prepared for manufacturing these products, chemicals that are most valuable as the basis of baking powder. There are millions of pounds of tartaric acid used for this purpose. We are assured by some of the baking powder people that their tests show that this acid is equally as good as the tartaric acid produced in France and Spain for making baking powder." (Letter to Laboratory from a large lumberman.)

FOREST EXPERIMENT STATIONS

An Unexpected News Story: It is the experience of the Priest River Experiment Station to be visited regularly every few days by one of the Missoula newspaper reporters - a friendly but persistent caller. As we are not daily departing and arriving from the field, and as our work of compilation and correlation does not yield sensational discoveries every day, we are frequently rather hard put to it for something of news value. The other day one of us, who was in the midst of abstracting an Austrian forestry journal when the press representative called, appealed to him in despair: "Now, tell me what news interest you can get out of routine work like this?" A few questions and out came his pad and pencil: "You say that there are three of you Research men here in Missoula translating and abstracting, currently, the scientific articles appearing in three foreign forestry periodicals? In French, German and Norwegian? And you say that a journal called Botanical Abstracts, contributed to by several hundred collaborators like yourselves, brings together each month the gist of the progress made throughout the world in such botanical subjects as agronomy, forestry, horticulture, pathology, pharmaceutical botany, etc.? And all this is for the benefit of American science and industry?" And then as he arose to leave: "Why, that'll make an excellent story."--R.H.Weidman.

Experiment Stations Personnel: Within the last two months the two vacancies which have existed in the staffs of the experiment stations have been filled. Forest Assistant Fred H. Miller, of District 3, has reported to the Southern Forest Experiment Station, with headquarters at New Orleans, and Forest Assistant Harry T. Gisborne, of the Whitman Forest in District 6, has gone to Missoula as a member of the staff of the Priest River Forest Experiment Station. Miller will be concerned first with the southern pine growth and yield study in cooperation with the National Research Council, and Gisborne is going to undertake the fire studies in District 1.

DISTRICT 1 - NORTHERN DISTRICT

Dry Kiln Course: Messrs. A. Koehler, A. Hermann, and A. C. Knauss of the Madison Laboratory will arrive in the District April 3 to arrange for the dry kiln course to be given at Gibbs, Idaho, April 10 to 22. Indications are that this will be a very successful course. Ten men have already registered for the work, and it is expected that the enrollment will be at least fifteen.

S. V. Fullaway and James Girard returned to Missoula March 22 from a trip throughout the District to collect manufacturing costs for 1921. Practically all the large mills in the District were visited. Manufacturing costs show a greater variation for 1921 than for any year since this study was commenced, ranging from about $10.00 per M as a minimum to about $21.00 per M as a maximum for manufacturing only. The high manufacturing costs for 1921 are due largely to the small output cut as a general rule, only one mill in the District showing a cut above the average, while many of the mills cut only 25 or 30 per cent of normal. The operators cooperated very willingly in this work, giving us all the information asked for.

Information was also collected on freight tariffs, and it was found that the rate has increased very rapidly for the last four or five years. In 1918 the average freight amounted to about $10.00 per M, while in 1921 the average was about $15.00 per M.

Emergency Rations: The office of Maintenance in District 1 has just started in on the task of assembling about 7,000 one-day emergency rations to be used by firemen during the coming season. Each day's ration is carefully packed in a cloth bag fastened at the top by means of a stapling machine. The cost of these rations is approximately $1.25 each, plus the cost of packing which can not yet be determined.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Federation of Outdoor Clubs: A national meeting for the organization of a federation of Outdoor Clubs has been called in St. Louis, Missouri, for April 24, 25, 26 and 27. The purpose is to get a central organization of people interested in all forms of human use of the outdoors. Such names as H. S. Graves, Gifford Pinchot, Albert Britt, P. S. Ridsdale, F. A. Waugh and others interested in forestry are found along with many equally as prominent in other outdoor fields appear in the list of the organization committee of 100. If the meeting accomplishes its purpose, the federation can do immeasurable good.

Forest Officer Lectures in Minnesota: H. N. Wheeler, in charge of PR, has returned from a five-weeks lecture tour in Minnesota, during which he delivered 50 lectures before 13,135 people in 28 different towns. He met with the most hearty response and it is believed that this is the beginning of a very decided advancement in forestry in that State. The State Forestry Department of Minnesota bore one-half of the expenses of the trip.

Forest Articles in Rio Grande "Red Book": The RAILROAD RED BOOK, the D. & R.G. official publication, has started a series of articles, one to appear each month during a 12-months period, on the National Forests passed by this line. The road passes by and through 12 National Forests in Colorado, and the series will cover each one individually.

Thomas H. Gill, of the Branch of PR in Washington, who was detailed to the Denver office while Mr. Wheeler was absent on a lecture tour in Minnesota, has returned to Washington.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Our Mexico Menace: Every spring, unrestrained, the flames from south of the border threaten our timber and grasslands. For many years the Coronado Forest, which has about sixty miles of boundary along the line that separates the State of Arizona and the Old Mexico State of Sonora, has stood exposed to forest fires that have started in the mountains of the southern republic and swept fiercely northward. Little or no effort at control has been made by the Mexican authorities. By the time the fires reach the border they have become conflagrations and their wide fronts present tremendous problems. Every year the Coronado men pace helplessly up and down the international line and wait impatiently for the flames to pass the point where courtesy ceases and public interest begins. Efforts at cooperation with the Mexican Government have borne little result and now again the Coronado is facing the opening of the fire season with the danger unabated. In addition, this year the situation is aggravated by an abnormally heavy grass cover that will make an invading fire come like a pestilence.

New Grazing Seasons Asked: The New Mexico Cattle and Horse Growers Association at its recent annual convention passed a resolution recommending to the Forest Service that the grazing season in District 3 begin January 1 and end December 31; that payments on all yearly permits shall be made in two equal installments, January 1 and July 1; that short permits shall be paid in full either on January 1 or July 1, according to the period applied for. Furthermore, that if the change in grazing season be allowed, it shall be understood that no grazing fees shall be required prior to April 1 on calves born the previous year.

Turpentine Still on the Prescott: Mr. J. E. Norman, one of the timber operators on the Prescott, is contemplating the installation of a turpentine still at or near Camp Wood. Turpentine is to be manufactured in connection with the sawmill operations. Mature timber that has been marked for cutting will first be turpentined and then cut for sawlogs.--Prescott.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Making Test of Range Finders: The Office of Engineering recently borrowed a Hyman Ranger Finder from Keuffel & Esser of San Francisco to test out and determine its adaptability and usefulness to the Forest Service organization as a whole, and the results were gratifying. Using a 1-chain base, it was possible to determine distances up to three miles with an average error of 15 feet to the mile. There is no limit to the distance that can be determined with the range finder, but of course the error increases in proportion to the distance. The instrument is about 3 inches long, 1 inch wide, and weighs 4 ounces. It is not only possible to obtain the distance to any visible point, but the distance can be measured between two inaccessible objects several miles away.

The width and height of a fire, for example, could be measured providing the edges were visible. There is nothing complicated about these instruments, and no knowledge of trigonometry is necessary, and by following the simple instructions furnished with each range finder, very accurate results can be obtained.--M.S.W.

Spelling of Toiyabe Will be Changed: The United States Geographic Board on October 7, 1908, established the name "Toyabe" for the range of mountains in Nye County, Nevada, and at its last annual meeting held March 1, the question of establishing the form "Toiyabe" for the mountains was considered by the Board, but the Board declined to make the change asked for. Therefore, it will be necessary for us to adopt the former method of spelling this name.

Colorado Man Wants Timber: Mr. O. W. Burdick, of Grand Junction, Colorado, called at the office yesterday with the object in view of locating a considerable amount of Douglas fir piling timber. The material desired ranges in diameter from 10 to 18 inches at the butt with nothing less than a 7-inch tip. Mr. Burdick was referred to Supervisors Mains and Watts, and it is hoped that one of these Supervisors will be able to make some desirable thinnings from some of the Douglas fir and larch stands.

Snake River Bridge Completed: The biggest event in the history of Jackson Hole was consummated last week, the completion of the Snake River bridge. This bridge is 650 feet in length, of standard iron construction on concrete piers and abutments. The project was financed by the Federal Government, State of Wyoming, Lincoln County, and the local community. Fifteen thousand dollars were contributed by subscription in Jackson Hole.--Teton News Letter.

DISTRICT 5 - CALIFORNIA DISTRICT

Lectures at U. C. Forest School: District Forester Redington is giving a series of lectures before the seniors and juniors of the Forest School, University of California, on forest administration. The men seem to be particularly interested in learning more details about the mechanics of administration. The scheme of rating personnel, the work plan outlined, the question of standards, the intensive studies made by Messrs. Show and Kotok to determine if our protection organization was adequate on an individual unit - all of these appeared to be of interest to the men.

Colonel Graves Visits Us: This office was honored on Saturday, April 1, by a visit from the former Forester, Colonel Henry S. Graves. Col. Graves will soon take up actively his duties as Dean of the Yale Forest School. As will be recalled, he left this same position in 1910, when he was appointed to the position of Forester.

Mr. Graves is on a tour of the West, informing himself of the general forestry situation, and is particularly interested in the status of forest education throughout the country, and on his trip is conferring with Directors of experiment stations, deans of forest schools and State and local educational organizations.

Truckee a Lively Place: The mountain town of Truckee is having an unusually lively winter season. Motion picture companies and the winter sports people have kept the hotels and rooming houses filled to overflowing. An average of three to four movie companies has been in Truckee all winter, some with a cast of one hundred people or more. The scenes taken here are mostly for plays with Canadian and Alaskan settings. Dog teams and red-coated Royal Northwest Mounted Police have changed the town into an old-time Hudson Bay post. One day the local Ranger, while skiing across country in the vicinity of Truckee, was greatly astonished to find himself suddenly passing from the United States into Canada - a neatly constructed trail sign told him so. While puzzling over the peculiar situation, several uniformed R.N.M.P. appeared and assured the befuddled Ranger that everything was all right, and that he was still only a few miles from Truckee.

While Alaska pictures are taken in sunny California, the taking of them is not always so sunny. The Lasky Company did much of their work here at night, from 10 P. M. to 4 A. M. During this time the thermometer registered from zero to 22° below, the snow was six feet deep and much of the time a wild, howling blizzard was blowing. For once the blizzard machines were not necessary.--Ranger DeCamp, Tahoe.

New F. S. Story by Ralph Cummins: A new Forest Service story by Ralph Cummins will appear in the March 25 issue of "Short Stories." Mr. Cummins will be remembered as the author of the "Fire Fighters" and "Badge of Fighting Hearts" and the Universal picture "The Fire Evil."

The new story is called "Sky-High Corral" and is a story of stockmen and rangers with its setting on the Klamath Forest, mainly in the Marble Mountain section.

"Sky-High Corral" will go into the motion picture production next fall.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Douglas Fir Exports: The exports of Douglas fir have increased from 301,144 M feet in 1919 and 451,223 M feet in 1920 to 455,223 M feet in 1921. The exports for 1913 were 665,295 M. The 1921 increase is due largely to the heavy buying of fir by Japan, which country imported 244,556 M in 1921 against 63,165 M feet in 1920 and 27,810 M feet in 1919. China purchased 94,957 M feet in 1921; Peru, 44,788 M; Australia, 32,364 M. These four markets took about 90 per cent of the total exports of Douglas fir in 1921.

New Plans for Diamond Lake: Completion of plans for the immediate development of the Diamond Lake region on the Umpqua have been made. These plans contemplate the completion of various road projects which have been under way for the past two years to make the area accessible to campers and tourists.

Although some 1,500 campers visited the shores of Diamond Lake last summer, it is contemplated with the proposed development already partially completed the number of visitors who desire to enjoy the bathing and fishing facilities and fine outdoor life at Diamond Lake will run into the thousands.--C.J.B.

Insect Control Plans: The cooperative agreement between the Klamath Protective Association, State of Oregon, and the Government has been signed by the Association, the Governor and the Secretaries of Agriculture and Interior; this was necessary since the area affected consists of private holdings, State lands and portions of National Forests and an Indian reservation. The preliminary organization work is now being effected at Klamath Falls, and it is expected that field operations will begin in early April.

Pigeons: Homing pigeon news travels rapidly, not only on the wing but also from newspaper to newspaper. A newspaper reporter will grab a pigeon story with more zest than the report of a thousand-acre fire. News of any forest activity, no matter how unimportant, if carried by a bird will go in on the first page of a small town newspaper, and newspapers all over the country will steal it. The fact that a pigeon carried the news intensifies the importance of the Forest Service activity.

The news of the pigeon's work last summer on the Idaho has reached the New York Times January 22 in a half column article. Thousands have read it and talked about it.--W. J. Sproat, Colville.

DISTRICT 7 - EASTERN DISTRICT

From an Appalachian Supervisor to a Special Use Permittee: "Dear Sir: A good many complaints have come to ForestOfficers that you have been making liquor on the Government land where you are now living. If this is true, you are advised that it is strictly against the regulations governing the occupancy of lands belonging to the United States. If complaints continue to come in I shall be compelled to take action looking to the cancellation of your special use permit. I would be glad, therefore, if you would consider this letter as a friendly warning, because if you are making liquor and still continue to do so you will have to hunt for another place to live other than on Government land."

And in Reply: "Dear Forest Service: I thank you for your kind letter. I was caught once for making some whiskey but don't know if it was on Government land or not. Was tried and served six months for it. Have not made any more since I got out. They is whiskey comes in here and it is all laid on me. I think the one that is doing the reporting is the man that is fooling with the whiskey. I thank you for your advice."

Supervisor Lufburrow, Alabama, boasts in a recent letter of a 47-minute ride over his Forest in an airplane and inquires casually if any other Eastern District Supervisor has ever viewed his domain from above. A few days after Lufburrow's airplane survey it was reported in Moulton that as one result of the trip all the moonshiners in the Alabama woods were right busy making new locations.

K. E. Kimball, promoted to the position of Forest Supervisor, effective April 1, spent a few days this week in the District office at Washington en route from Moulton, Alabama, to Russellville, Arkansas, where he is to assume charge of the Ozark Forest. Kimball entered the Service as a surveyor in the fall of 1912. From the spring of 1913 until January, 1920, he filled several assignments as Forest Ranger on the White Mountain Forest in New Hampshire. During 1920 he was engaged in acquisition work in New Hampshire, Virginia and Tennessee, and since February, 1921, has been on similar work within the Alabama unit. Forest Supervisor Ben F. Vaughan, of the Ozark is relinquishing the duties of the supervisorship to give his full time and effort to the District 7 road and trail program. For the present his new work will keep him on the Ozark.

The only Graziers' Association on the Purchase Forests of District 7 was organized through the efforts of Supervisor S. H. Marsh and his assistants on the Shenandoah in 1917. Soon after organization was effected the association purchased five purebred bulls. Difficulties were encountered in connection with wintering these purebreds and the following year the association sold t them to individual members with the understanding that the organization would pay $15 per season to these members for each purebred placed on the range. Early in 1920 this fee was raised to $25 and as a result twelve purebred bulls were grazed that season. At a meeting of the association last week it was brought out that fourteen purebreds were on the range last year; that several more will be added in 1922, and that not a solitary scrub will be found on that section of the Shenandoah used by this association. The organization comprises about 100 graziers ranging a total of some 1,500 head of cattle.

In October, 1921, a band of ten antelope was brought from far-away Alberta and given a new home on the Wichita. Within five or six weeks after their arrival five died from causes which it has not been possible to determine with certainty. Another has recently succumbed, but the remaining four are apparently thriving. In cooperation with the American Bison Society, through whose good offices the original ten were secured, arrangements have now been made to bring five additional antelope from the same section in Alberta to the Wichita in an effort to replace those so unfortunately lost.

Supervisor L. L. Bishop, in charge of the Allegheny Purchase Unit, was in Washington last week in the interest of the extension of the Allegheny Purchase Unit Boundary. The purpose is to embrace a small area of land that had formerly been excluded through action by the Pennsylvania State Forest Commission. The indications now are that the State authorities are favorable to the enlargement of the present boundaries of the unit, and that it will not be difficult to have the change made. The Pennsylvania Water Supply Commission also has to pass on this question, but since the lands involved are on the headwaters of the Allegheny and have a direct influence on the flood menace to Pittsburgh, it is confidently expected that any request made by the Federal Government for the enlargement of the unit will be approved by it.

Mr. Bishop reports that while the proposals to sell lands at first came in slowly after work was started on this unit last July, a more comprehensive knowledge of the aims of the Government and the methods of doing business in the purchase of lands have now led owners to offer their tracts more freely. It is confidently expected that there will be considerably more lands proposed than there will be money with which to buy. We will probably be able to purchase not less than 50,000 acres this fiscal year at a cost not exceeding $3.00 per acre, probably less.

Apparently for the Purpose of Earning a Little Money Fighting Fire, General Hooper of Epperson, Tennessee, got up early one morning in March 1921, and set out a nice little string of fires on the Cherokee Forest. There were some other early birds in the neighborhood that morning, so Hooper's activities were not entirely unobserved. Accordingly on March 21, Hooper was arrested and bound over to the United States Commissioner in the sum of $1,000 for trial in the Federal Court. One postponement resulted in the case not coming to trial until March 2, 1922, but on that date a jury in the Federal Court at Knoxville brought in a verdict of guilty after fifteen minutes deliberation. Attorney for the defense asked for a new trial and was given until March 15 to substantiate his request. Supervisor Thompson rather expects the motion for a new trial to be denied, but if granted is confident of securing a second verdict of guilty.--J.E.S.

Prosecution of Game Law Violators on the Pisgah: "I am glad to report that the Department of Justice, through the U. S. District Attorney and the U. S. marshals, has cooperated with us to the fullest extent, not only in apprehending poachers who are caught within the Reserve, but also in prosecuting the cases once they are in court. - - -We have tried during the May and November, 1921, terms of court, the following number of cases: 15 trespassers were tried and convicted; 4 cases were nolle prossed with leave; 1 case was dismissed because of insufficient evidence. The amount of fines range from $25 to $250. No jail sentences were administered." (From Supervisor's 1921 annual grazing report.)

Progress of Weeks Law Purchases

The 2,047,718 acres of land purchased to date under the Weeks Law are distributed by States as follows:

State	Acreage	Average price	Total cost
Alabama	79,007	$4.67	$368,620.91
Arkansas	54,061	3.64	197,018.13
Georgia	154,367	6.71	1,035,430.33
Maine	32,320	5.56	179,784.47
New Hampshire	413,678	6.61	2,735,040.80
North Carolina	348,565	6.24	2,173,800.71
South Carolina	18,546	5.47	101,542.49
Tennessee	265,896	4.90	1,302,948.60
Virginia	473,847	3.67	1,737,224.60
West Virginia	207,431	3.02	625,449.39
Total	2,047,718	$5.11	$10,456,860.43

The purchases made at the meeting of the National Forest Reservation Commission held on December 21, 1921, were acquired at an average price of $3.33 per acre, the total acreage involved being 134,644 acres, the total price $448,606.71. This represents the lowest average price paid for lands since work began, and is an indication of the excellent opportunities at this time to buy lands cheaply, the reason, of course, being the depressed market conditions and the pressure felt by large land owners to liquidate.

Examiners of Surveys Riemer, Pidgeon, Conrad and Jenney have commenced the survey of some 90,000 acres of land on the Monongahela unit which was approved for purchase at the December meeting of the National Forest Reservation Commission. This survey will require the retracing of 220 miles of boundary lines, and it is expected that the work will be completed about July 1.

Messrs. Muzzey, Denman, and Sloan have started a similar survey of approximately 27,000 acres on the Unaka, also approved at the December meeting of the Commission.

H. O. Stabler, Assistant District Forester, fell a victim to the "flu" about two weeks ago and is experiencing unusual difficulty in getting back in trim. On the advice of his physician he is now rusticating at Sandy Spring, Maryland, and it is hoped that he will very soon be again in shape for another round with working plans, standards, fire and finance, and all the other little things which make Operation men so generally cheerful and happy.

DISTRICT 8 - ALASKA DISTRICT

Supervisor McDonald spent six weeks during February and March in Juneau and Ketchikan going over the Chugach estimates with the District Office and attending the Ranger meeting at Ketchikan.

Personnel Changes on Chugach: Supervisor Beach was transferred to District 6 last fall, Deputy Supervisor McDonald was made Supervisor, Clerk Pratt was promoted to Executive Assistant, Ranger Strand resigned and was replaced by E. M. Jacobsen, and it is now planned to move Ranger Haneman from the Anchorage District to Prince William Sound, placing a new man in the Anchorage District.

The 1923 Estimates for the Chugach provide for the purchase of a light power speeder to be used in fire patrol work on the Government railroad. The use of this equipment will make it possible to handle fire patrol along the railroad with one less guard than heretofore.

A Young Lady in Montana, school teacher by profession, with a year's experience as lookout on an Idaho Forest, has written to the Chugach applying for a position as lookout. Her picture accompanied the application, and a glance at it caused the whole force to mourn the fact that the Chugach has no lookout stations.

March 20 finds the Chugach headquarters still snugly encased in a 6-foot sheet of snow.

The Rope That Didn't Cinch

By Geo. D. Russell, Ozark

It's damnably exasperating how the Sherlock Holmes' in D-5 (and some other western districts) can find a few eggshells, Black Jack chewing gum wrappers, Kelly-Springfield cord tire tracks, a piece of cotton rope and a trail across three Forests 126 miles long, then hastily come to a happy climax of the episode with a $50.00 fine for the suspect.

As a striking contrast, consider this case.

A Ranger and a Fire Guard sight a fire an hour before daylight. By sun-up the fire is extinguished, and a plain horse trail, and none other since the last rain, is found in the old road along the very edge of the fire. Fire showed four different sets. Tracks showed three toe calks and one plain shoe. Careful measurements are taken and trail followed 2½ miles where another fire is found beside the road, set in at least two places. Trail followed half mile further to a house. Suspect replies, when questioned by Fire Guard, that he came home from another direction the night before, but admits passing one of the fires and denies any knowledge of the first one. Other witnesses are found who swear that suspect did not return from where he stated, that he did travel road by first fire and within the hour fire was first sighted. Next day the horse is examined by the Ranger, the shoes fit measurements exactly and have three toe calks and one smooth. Suspect gets cold feet at second questioning and virtually admits his guilt to the Ranger by wanting to know the quickest and cheapest way out of it. Ranger advises a plea of guilty and suspect agrees to go next day and discuss it with the Fire Guard, whom he has known for years, intimating that if Guard advises the same a plea of guilty will be made.

At this moment an avowed woods-burner appears on the scene and in the presence of the Ranger tells the suspect that he can't be convicted without two eye witnesses.

Suspect changes his mind, says he won't plead guilty and even tries to intimidate the Ranger and Guard a few days later into dropping the case.

The fire occurred in February. The Ranger's trespass report is submitted through the usual channels to U. S. Attorney General's office, resulting in a trial of the case the following November - and the suspect coming clear.

Note the contrast in the evidence in these two cases. There might have been other Kelly-Springfield tracks in 126 miles, but not another horse with the same size shoes with three toe calks and one smooth toe in three miles.

"The Rope Cinched It" in the Stanislaus case, What broke the cinch in the Ozark case? D-7 seems to require a very strong cinch before her legal talent can win a case. The District Attorney didn't even have the Fire Guard summoned, until the Supervisor and Ranger both insisted on it. The Ranger was called back across three States to give his evidence and one other witness was summoned to corroborate it, and that witness was known to be one of the strongest sympathizers with the suspect.

The Supervisor and Ranger will probably be saddled with the blame for a failure and the fire bugs will be bolder than ever on the already overburdened Ozark.

Suggested that D-5 cut out the Sherlock dope and slip their legal recipe in the Service Bulletin that the sleuths of D-7 labor not in vain.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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RADIO ARBOR DAY MESSAGE

FROM THE

SECRETARY OF AGRICULTURE TO THE PEOPLE OF THE UNITED STATES

Fifty years ago in Nebraska the first Arbor Day was observed. A distinguished citizen of that State, who later became one of our national leaders, had the foresight to discern what tree planting might accomplish. "Arbor Day" means "Tree Day"; and we honor its founder, the Hon. J. Sterling Morton.

In 1872 "Arbor Day" had in view the planting of trees where nature had too sparingly provided them. In 1922 we confront a greater task. From a nation of forty million we have become one of more than a hundred million; but our forests, a half-century ago thought inexhaustible, have been retreating steadily before fire and ax. Unless as a people we give thought to our need for forests we shall suffer an increasing economic and social loss. A vast area of denuded and idle land awaits employment for the only useful service which it can render - tree growing. We can produce all the timber that we require, maintain our streams flowing in unshrunken volume, preserve the allurement and wild life of the out-of-doors, and add comfort and beauty to our homes and highways - if we make the growing and protecting of trees a national concern.

While we use and enjoy our forests, let us keep them green. Let us unitedly protect them from the great devastator - fire. Let us plant trees on roadside and farm, in the school yard and around the home, and in the waste areas where new forests must be grown for old. So shall we preserve for ourselves and our children one of the greatest blessings and most vital resources of America.

General Land Exchange Bill

One of the most important pieces of National Forest legislation enacted by Congress in recent years is the following land exchange bill, which was approved by the President on March 20, 1922.

AN ACT

To consolidate national forest lands.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, when the public interests will be benefited thereby, the Secretary of the Interior be, and hereby is, authorized in his discretion to accept on behalf of the United States title to any lands within the exterior boundaries of the national forests which, in the opinion of the Secretary of Agriculture, are chiefly valuable for national forest purposes, and in exchange therefor may patent not to exceed an equal value of such national forest land, in the same State, surveyed and nonmineral in character, or the Secretary of Agriculture may authorize the grantor to cut and remove an equal value of timber within the national forests of the same State; the values in each case to be determined by the Secretary of Agriculture: Provided, That before any such exchange is effected notice of the contemplated exchange reciting the lands involved shall be published, once each week for four successive weeks in some newspaper of general circulation in the county or counties in which may be situated the lands to be accepted, and in some like newspaper published in any county in which may be situated any lands or timber to be given in such exchange. Timber given in such exchanges shall be cut and removed under the laws and regulations relating to the national forests, and under the direction and supervision and in accordance with the requirements of the Secretary of Agriculture. Lands conveyed to the United States under this Act shall, upon acceptance of title, become parts of the national forest within whose exterior boundaries they are located.

Taking the Cause out of Man-Caused Fires

By Roy Headley

The 1921 man-caused fire line shows a sharp rise in some Districts and is pointed upward in every District. After all the explanations and alibis are made, what are we going to do about it? Must we continue to confess ourselves unable to do more than keep fires from being as numerous as they might have been? District 2 insists that it is going to actually bring the number of man-caused fires down. Here is the program they have set for themselves:

To Reduce Man-Caused Fires (New Measures)

Distribute cut out slides.

Put energy and pep into Fire Protection Week (Arbor Day).

Definite sign plans to be completed this year which will result in better distribution of fire signs, thus making them more effective.

Secure financial cooperation from timberland owners, also interest individuals, corporations and civic associations in helping finance protection guards.

Selling an interest in our concern means more care on the part of the individual and he will begin to spread propaganda for us.

Point out to landowners the advisability of eliminating fires from their holdings in order that their lands may have a better exchange value, if for no other reason.

Arrange for placing fire propaganda on automobile and game licenses issued by States.

Fires originating outside forest boundaries are now our foremost concern from the standpoint of damage, acreage burned and cost. Special efforts to be made this year to effect measures which will reduce this menace. It will mean a close study of State organizations;and effecting measures through cooperation, will not only mean quicker action on fires,but which should result in reducing the number of man-caused fires.

Introduce the teaching of fire protection in normal schools. Let's educate teachers before we try to force teaching of fire protection in schools.

The educational film should prove a decided factor in acquainting the public with forestry and in spreading fire propaganda.

To Reduce Man-Caused Fires - (Old methods to be continued as in the past)

Emphasize increased personal contact by all forest officers with everyone in and near the Forests.

Forest officers to take a direct part in community affairs.

Forest officers to give illustrated lectures and talks to schools, Boy Scouts, Y. M. C. A. camps, and other organizations.

Forest officers to make much greater effort to get news items in local papers.

Buttons, stickers, game cards, and lookout post cards will be in hands of field men for distribution before fire season opens.

Taking the Cause out of Man-Caused Fires (Con't.)

Follow up aggressively Law Enforcement Campaign.

Follow up placing responsibility for railroad fires on railroad companies.

Follow up placing responsibility on settlers and others for notifying forest officers before starting fires for clearing and when continued negligence is shown, expense incurred by us should be collected.

Decidedly more effort must be put on broadening the scope of cooperation with ex-forest officers, settlers and others.

Follow up cooperation with air mail service and private air concerns, largely for the publicity it affords.

Continue placing exhibits at every opportunity when large numbers of people can be reached.

Where We Stand

By Paul D. Kelleter, Washington

In a recent communication the Forester handled a situation presented to him by his correspondent in a manner which should give encouragement to all Forest officers. The following excerpt from the letter tells its own story:

"You stated in your letter that the present administration of the _________ Forest 'seems to have started a policy of hostility, suspicion, and contempt towards the settlers in here. No settlers are employed on any work by the Forest officials, green men are brought in from outside, and the Forest officials constantly seem to be trying to get something on the settlers.' The settlers are, you say, almost afraid to report a fire for fear of bringing themselves under suspicion and even arrest. You wish to know whether the policy is to be one of hostility or conciliation toward the settlers, and say that if the former, you and your wife have very prominent and influential relatives and friends in the East and can make trouble. 'On the other hand,' you say, 'I am perfectly willing to cooperate with the Forest provided I get a square deal and proper protection.'

"Let me say that the Forest Service, and I personally at its head, intends and will use every effort to give you and every other settler and citizen a square deal, quite irrespective of the extent to which they may or may not have influential connections. On the other hand, the Forest Service will not be swayed by outside influence to depart from a course of strict impartiality. It will proceed alike without favoritism and without prejudice. I hope this letter will make entirely clear to you that it is our desire both to be fair and to cultivate friendly relations with local residents to the fullest extent made possible by their willingness to cooperate, within the limits prescribed by our responsibility for efficient handling of the public funds and public business."

Trout Waters of the National Forests

By A. H. Dinsmore, Bureau of Fisheries

Part I.

The streams of the National Forests are, for the most part, the small feeder streams which go to make up the larger tributaries of the great rivers of the country. Occasionally they have their sources in spring-fed, crater or glacial lakes in comparatively high altitudes. In the White Mountain Forest they are oftener in bogs of sphagnum moss, through which the water seeps from all directions to a more or less open mid-channel.

In the Rocky Mountains, particularly in the great forests which enclose the Yellowstone Park, these stream heads are frequently found in the open, parklike passes. In crossing such a divide one first comes to a dry storm channel. Follow this and sooner or later the stream bed becomes moist. Then a trickle of surface water appears. This is joined by other trickles rising in converging channels, until, as it leaves the park area and begins its tumble down the range, it has become a considerable stream.

The Pacific Coast forests may have their source streams in high timbered plateaus, while in the Black Hills they sometimes rise full volume, as great springs, in the canyon bottoms or among the foothills.

Not only do these forest protected streams assure the constant flow of the important rivers they feed, but their office is also, if given proper chance, to contribute largely to the fish life of the more important waters below, for these are the nursery streams where small trout may grow, almost unmolested, to drop down, as they reach legal size, to stock the larger streams below. It is the skinning of these streams by hog fishermen, which the 5 and 6 inch legal limit permits, that far more than decent fishing has resulted in depopulating the once fine trout rivers of many sections of the country. And until these small streams can be closed to the fisherman completely, as they should be, there can be little hope of restocking the larger streams.

But many of these streams in high altitudes were destitute of fish life and unless they have been stocked artificially, or in rare instances fish have reached them naturally, as the Yellowstone River is said to have been stocked by trout from the Snake River passing through Two-Ocean Creek, they may still be found in this condition.

Of first importance, then, is a survey of the streams in a given ranger district to determine how generally trout are already distributed through them. Sometimes these fishless waters are of wide extent.

As a member of the Gregg party, which explored the Falls River Basin of the Yellowstone Park, during the summer of 1920, I estimated that not less than 150 miles of the headwaters of the Falls River, the Bechler River and Boundary Creek were at that late date still without fish. Considerable stocking in that section was done late that season, but there are doubtless still many miles of streams and I think a few beautiful little lakes in that section still unproductive.

There is no better example of this character of streams rising on high, volcanic plateaus, the success which follows stocking them or their wonderful effect, when stocked, on the fish life of the larger streams of which they are tributary, than is afforded by many of the streams of the Yellowstone region.

With the exception of the Yellowstone River itself, which no less an authority than David Starr Jordan says was stocked naturally by the passage of trout from the headwaters of the Snake River through Two-Ocean Creek, all the streams leaving the Park plateau were, above the falls over which they leap to the valleys below, like the Falls River and its tributaries, destitute of fish life. During 1890 a few small trout were introduced to many of these waters in close proximity to the tourist route. The results of this work were noteworthy, and since that time they have afforded the tourist wonderful fishing, though some of them are beginning to show the usual effect of overfishing without adequate restocking.

Perhaps even more remarkable than the fishing afforded within the Park has been the effect on the fish life of some of the larger rivers beyond the Park limits. The Yellowstone River, still the undisputed home of the native trout through and above its canyons, has been stocked below with the brook trout and the European trout from the east and west branches of the Gardiner River. To the Madison have dropped the brook trout and the rainbow from the Gibbon, and the Loch Leven and European trouts from the Firehole. But most remarkable has been the passage of the Loch Leven and particularly the lake trout from Lewis and Shoshone Lakes down through Lewis River to the Snake River and its tributaries beyond the Park.

So far as I know, but one small plant of each species was made in 1890. When I first became familiar with the matter, during the summer of 1901, lake trout were being taken in large numbers below Lewis Falls, just above the crossing of the road from Yellowstone Lake to Jackson Hole. In September, 1920, I saw numbers of large trout, both lake and Loch Leven, taken below the great irrigation dam at the foot of Jackson Lake, through which the Snake River passes. I was told that the fish are now taken as far down the Snake as Idaho Falls; that they had passed up the outlet from Jenne Lake and stocked that body of water, so that now at least half the fish taken from it are the lake trout, and that they have also been taken in other branches of the Snake. (To be continued.)

A Little Discussion of Things in General

By A. O. Medlin, D-1

For a long time, as Emerson might put it, I have been wanting to say it. It is about Forest Service English, the nonuse of dictionaries, and some other things that have not been covered in Bulletin articles.

By Forest Service English, I mean for one thing the practice of splitting infinitives. The practice is by no means confined to the "rough-necks.' Beginning with graduates of Yale and Harvard, and even Montana, the blight has gravitated down through the ranks until the whole organization, from top to bottom, is all but ineradicably infected with it. Run over any grade of official correspondence, if you have the time, or go over a few pages of your own, and note how often you find such expressions as "to properly express," "to permanently construct," "to quickly extinguish," "to thoroughly perform," and dozens of others along the same line. Of all errors of grammar, or logic, or rhetoric, or whatever else it might be, in my opinion at least, this is the one most deserving of a long line of condemnatory adjectives and vitriolic "cuss" words. It is an error that has long been notorious. It is certainly inexcusable; and yet everyone commits it every day in the week.

Everyone who at any time is required to attend to official correspondence should have a good dictionary within easy reach of his desk. To have one in the house is by no means sufficient as long as even the best of us are infected with the germ of laziness. It must be within easy reach of the desk if it is to serve its purpose.

Quite recently I had occasion to go over the written work of a representative number of rangers and scalers and others of equal or higher rank. In some cases I was happily surprised to find clean-cut, flowing sentences that went directly to the point in the fewest possible words; but in the majority of cases it was entirely different. I found a lot of fine, big, strapping fellows - real he-men - who express their thoughts in sentences that a fourth-grade schoolboy would be required to do over. It may be that the English language even at its best is a relatively poor means of conveying thought. What then can be expected from those who go through life with never a thought as to the best method of using that language when they want to "get something across?"

A Market for Larkspur

By Will C. Barnes

Some one has said that a weed was a plant for which nobody has yet found an economic use. We have been spending a good many thousand dollars in eradicating larkspur from the stock ranges on many of our National Forests. The proprietor of a nursery in Hopedale, Illinois, happened to run across a copy of our bulletin "Eradicating Tall Larkspur." His firm is in need of large numbers of Delphinium plants each year, and he asks to be put in touch with some Supervisor on whose Forest he can find a liberal supply of these plants. "What is one man's poison is another man's meat." We have the Delphinium to spare. Some Supervisor will probably be glad to grant him a free use permit for just as many larkspur plants as he can haul away. We told him where to write.

Floods in the Foothills

By C. G. Bates, Fremont Experiment Station

Since the Pueblo flood of June 1921, very serious consideration has been given to the desirability of further developing the foothills region, usually called the pinon-juniper or woodland type, which in recent years has received scant consideration by the Service, and of which, in fact, a great deal has been eliminated from the Forests because of low forest values and difficulty of administration. The Pueblo flood brought out very clearly that the foothills areas are the source of many very spontaneous and destructive freshets, because of the rapid run-off which is possible from their stiff, and often badly baked soils. There is also some evidence that the so-called "cloud-bursts" occur more frequently in the foothills than anywhere else in or near the mountains.

The woodland type and semi-desert adjacent thereto, which was involved in the Pueblo flood is believed to be typical of a great proportion of such areas in the Rocky Mountain States, being characterized by sandstones, shales and some limestones, with the fine clayey or adobe soils which arise from these sedimentary rocks. Therefore, it is thought that tests in this locality will be of considerable interest in Districts 3 and 4, and to a slight extent in 1.

We do not wish to convey the impression that District 2 is as yet ready to reverse its policy and attitude toward the pinon-juniper lands as Forest properties. It does, however, seem to be a matter requiring very careful consideration and some experimentation. Consequently a decision was reached to determine the practicability of planting in the foothills, and especially its cost relative to that of the operations now being generally carried on. There seems little reason for doubt that if trees can be made to grow, and to just the extent that they can be made to grow on any of the low hills, an extremely marked benefit will arise.

In execution of this decision, a small planting test was made near Colorado Springs on April 11, yellow pine, one-seeded juniper and Douglas fir being used to the extent of about 150 trees of each. Pinon will be used in later tests when the stock can be grown. It may seem odd to some that Douglas fir should be used at so low an elevation (about 6500') but it is a fact that this species often occurs on northerly exposures where the prevailing type is pinon, and in other ways gives much evidence of being as drought-resistant as yellow pine. The fir was in this case placed entirely on north exposure.

A site was selected which is not outside the range of pinon and juniper, but which, probably because of very severe soil conditions, has not been taken by these species. It is believed, therefore, that this initial test will be a very severe one. Also, owing to a dearth of moisture for several months, this 1922 test promises to be an abnormally severe one. The soil was found to be almost bone-dry except in occasional sandy pockets, and it appeared that unless rain fell very promptly the death of the trees would be a matter of only a few days. Fortunately, a light snow has been secured about 2 days after the planting was done.

It was estimated by Mr. Keithley that planting under the very difficult conditions which were here encountered would cost about twice as much per acre as on the sites now being generally planted.

It may be well to note that this small test has attracted a great deal of public interest, perhaps due to some intuitive feeling that the foothills country is more in need of attention than the high mountains where the forests generally take care of themselves.

Salting on the Modoc Forest

By W. S. Brown, Modoc

Some years ago Supervisor Durbin of the Modoc persuaded the Advisory Board of the Alturas Stock Association to pass a resolution not only to put 7 lbs. of salt per cow or horse out on the range during a six months season, but to provide also that the money for this salt be paid into the treasury of the association. At first some small permittees complained; the secretary of the association claimed thatbthe work of collecting and handling the money was excessive, and we were all just a little bit discouraged with the whole proposition.

However, the idea gradually gained favor. Competition among dealers which forced the price down to a rock bottom figure, efficient delivery at distribution points, the ever lessening number of salt-hungry cattle observed on the range, all tended to convince the stockmen that the Forest Service theory of more salt and yet more salt, properly distributed, meant better beef, better utilization of feed, less trampling of range, and less work in gathering. Not only are the stockmen now in favor of this plan of purchasing salt, but they demand such a large amount in excess of the seven pounds per head which they are required to purchase, that this year, the contractor is required to furnish a stockman all the salt he wants at the stock association contract price. The amount required for different permittees ranges all the way from a 50 lb. sack to 8 tons. Nothing less than a 50 lb. sack is handled. If a permittee has 10 head of cattle, he is required to buy 100 lbs. of salt; if 15 head of cattle, 150 lbs. For 1922 the salt purchased, including only that required on the 7 lbs. per head basis, amounts to 144,800 lbs., at a cost of $1,463.00. The plan covers 20,419 head of cattle and horses, belonging to 120 permittees and involves parts of 5 ranger districts.

Systematized and handled by Forest officers under authority from the Stock Association, one would be surprised at the really small amount of work involved. During the winter a letter is written and signed by the president and secretary of the association, inviting bids on salt, giving the approximate amount for each point of delivery. These two officials, in conference with the Supervisor pass upon the bids. After grazing applications are approved, lists are made up giving the amount and cost of salt that each permittee will be expected to buy. One copy is placed with the contractor, who tags each man's salt with his name and places it in storage at one of the delivery points. Each permittee is notified of the amount due and checks are made payable to a Forest officer, who deposits the money to the credit of the Stock Association. The contractor is paid in two or three installments. Most of the salt is hauled direct from the storage point to the range, either for immediate distribution or storage there. One large permittee, grazing 1,800 cattle, has gone still further. This firm bought an excess amount of salt last year at the contract price, and hauled it out late last fall, storing it on the range, where it would be readily accessible in the spring before the roads are dry enough to haul heavy loads. It is a significant fact that this firm of permittees, who have been operating in this section since the coming of the white man, are the strongest supporters of better salting. The methods of their forefathers do not appeal to them.

Another cattle and horse association, whose range on this Forest covers a large area, passed a resolution last fall raising the amount of salt required to 10 lbs. per head. The secretary of this association is the local banker, who reports to the Forest Supervisor at the close of each grazing season, permittees who have not paid for the required amount of salt purchased by the association for the given number of permitted cattle. During the past two years there have been no delinquents to report.

WASHINGTON NOTES.

Gifford Pinchot, Commissioner of Forestry for Pennsylvania, resigned on April 13, and Major R. Y. Stuart was appointed Commissioner by Governor Sproul on April 18.

Fellows, meet His Honor Paul D. Kelleter, Mayor-elect of Kensington, Maryland. "Shorty" is as sure of election as death and taxes, since all other candidates for the office have withdrawn.

Associate Forester E. A. Sherman again took up active fire fighting duty on April 24, when fire destroyed the structure adjoining his apartment at Forest Glen. Happily Mr. Sherman's property was not damaged by fire or water.

Colonel H. S. Graves returned to Washington April 24 from an extended field trip in the West.

Ward Shepard, General Assistant, Branch of Research, returned from a two weeks' field trip at Asheville, N. C. Ward claims to have taken off several pounds following Frothingham through the brush.

A Public Relations conference between State Foresters and officers of the Service will be held in Washington the afternoon of April 27 as a forerunner to the "Weeks Law" conference on cooperative fire protection, which is scheduled for April 28 and 29.

Assistant Forester Herbert A. Smith paid a short visit to the Pennsylvania Department of Forestry at Harrisburg during the week of April 16 in connection with Public Relations matters.

National Forest Manual: Pending the revision of the Manual, which is now in progress, there will be no amendments printed or issued for distribution from the Ogden Supply Depot. District Foresters will be notified by the individual Branch concerned of important changes in regulations and instructions.

FOREST PRODUCTS LABORATORY

*Trying it on the Chickens: Hearing of the success that has been experienced in feeding hydrolized sawdust to dairy stock, the Maine Agricultural Experiment Station has requested and been sent a supply of this synthetic food. They want to experiment on a number of their chickens to ascertain the possibilities of converting the material into eggs. From the nature of the food it is considered as not likely to be suited to this purpose, but a trial will nevertheless be made.

*Wood Still Leads for Propellers: During the past year the Air Service has tried several substitutes for wood in propellers - one a synthetic material called micarta, and the other, steel. The micarta propellers held out much promise for a period, but their costliness, the difficulty to balance, and extreme brittleness soon eliminated them from further use. Several failures with steel propellers recently have convinced the Air Service that they are not satisfactory and that wood will continue for some time to hold its own for propeller use.

Knot Hole Study: A British Columbia firm is interested in finding a method of doctoring low grade boards so that black and loose knots may be replaced and the board so improved as to be suitable for ordinary purposes. They consider the question of such importance that they are discussing the subject with a view to cooperation with the Laboratory on a study of the problem.

Hard on the Furniture Makers: "P.S. Incidentally I might say that apart from my particular line of work, I am crazy about woods, especially before they are spoiled by the cabinet maker and the furniture manufacturer."
(From the letter of a feminine correspondent to the Laboratory).

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Allotment Conference Held in Denver: Assistant Forester Roy Headley, Lord High Chancellor of the Exchequer, in the absence of Col. Greeley, conducted the annual allotment conference in D-2. In addition to the District personnel, the following Forest officers attended: C. E. Rachford and Evan Kelley of Washington, District Foresters F. C. W. Pooler and R. H. Rutledge, Forest Supervisors Hamel and Tinker.

During conference week, the monthly Service Meeting was held, at which Mr. Headley gave a message of greeting from the Forester and spoke briefly on subjects of interest to the members of the Forest Service.

A novel evening entertainment was provided in the form of a wireless concert at the home of District Forester Peck. Several Denver firms with powerful sending apparatus supplied the music. Caruso sang, the Philharmonic Orchestra played, and between the selections news items from Washington, Florida and other points were announced. During a lull in the musical program, a message floated in upon the wireless, - "Colorado sends greetings to Mr. Headley of Washington, Mr. Pooler of Albuquerque, and Mr. Rutledge of Ogden." In the absence of any other means to acknowledge the greeting, the gentlemen named bowed and blushed becomingly.

Marshall Joffre Visits Denver: Headed by the District Forester, about 10 ex-service men turned out from the District and Pike offices to help the Colorado Legionaries welcome Marshall Joffre to Denver.

New Crop of D-2 Forest Rangers: The ranger eligibles for this District may be itemized on the basis of previous experience thus: one-fourth have been in public service, one-fifth have had college experience, one-fifth were farmers, one-tenth mechanics, one-tenth lumbermen, and one-seventh miscellaneous tradesmen. Of these eligibles, eleven were born east of the Mississippi River and seven each were born in Nebraska and Colorado. The average age is 26 years. Two have been policemen, one a radio operator, and four have been salesmen.

Keeping on the Map: In 14 consecutive issues of a Laramie, Wyo., newspaper, 17 news items were published relative to the activities of the Medicine Bow National Forest. A great many of these items were copied by the Wyoming papers and at least one article appeared in the Denver papers. Hop to it!

Ranger Bill Says:

One of the hardest things in the world is t'know y'ur business an' keep from showin' it.

What kind of a flower does a Dewlap have, asked the new Grazin' Examiner t'other day?

You sure do put up a good 50¢ meal, said the Depty Super. as he passed his plate for the third helpin'.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Here Go the Lions on the Crook: Stockmen are pooling interests to get rid of big cats. Arrangements have been made by the grazing permittees of the Crook National Forest to assess each stockman at the rate of one and one-fourth cents per head of stock held under permit for each lion killed by a special hunter who is being employed to concentrate the efforts of himself and his pack of trained lion dogs on Mt. Graham. It is said that lions and their depredations in that vicinity have been on the increase. The hunter is to receive $40.00 for each lion trapped and the stockmen will keep two assessments ahead all the time in order to be ready to pay for the work as fast as the lions are brought in.

Unfriendly Acts: A bold fisherman was stopped on his way up the road by Mr. Claud Jones, resident of Cave Creek. The man then wanted to borrow a gun, since he had seen a great many deer tracks. Jones told him that there had been three men hung to a sycamore tree in the past for hunting deer. The gentleman from Ohio decided that he would only stay a few days longer.

Thus Cooperation Grows: Now come some "first Americans" and, in solemn council assembled, agree to cooperate with the Forest Service in the suppression of fires and the preservation of the forests. Supervisor Loveridge has entered into an arrangement with the Taos Indians, by which the Forest Service will place a well equipped tool box at the Taos Pueblo. This box will be secured by a special lock with four keys. One key will be kept by the War Captain, one by the Assistant War Captain, one in the Supervisor's office, and the fourth by the Taos Ranger. In case of fire, where the Indians are needed, the agreement provides a certain dignified ceremony in which, inasmuch as the War Captain has jurisdiction, he or his assistant will be first approached. The War Captain or his assistant will then gather the braves and proceed to the attack. A similar cooperation between the Santa Fe Forest and the Governor of the Cochiti Indians was accomplished some years ago and has worked very successfully.

Class Overgrazing: The specimen hunter learned what the cow already knew. When the range looked good and there was lots of grass and the seed stalks were waving high and you were making frantic efforts to get herbarium specimens while the getting was good, and you had about twenty-five and were wondering where in Sam Hill all the rest of 'em you'd heard tell about were hiding, did you ever crawl through a fence into a protected pasture and there stand amazed at the numbers of different grasses and weeds that were peacefully abiding? If you have had this experience, you have also had a striking illustration of class overgrazing - overgrazing of the most palatable species of forage plants. That's why you couldn't find all of the specimens on the outside, even though the range looked good. They were not there. The best had been cropped off close and only the undesirables left.

DISTRICT 3 (Cont.)

To keep, if possible, from this unfortunate condition, is our problem. It may mean underutilization of some of the grasses, or it may mean a change in the class of stock that uses the range - but the result of prolonged class overgrazing is, inevitably, decreased carrying capacity.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Inspection Conference: About a dozen men in the office spent Wednesday afternoon in "D" discussing the whys and wherefores of field inspection. Everyone took part in a general discussion of ways to improve inspections, whether more inspection is needed and how it could be secured. It was generally agreed that in the past there has not been enough contact with the men in the field "on the ground" and also that in general the time spent with each man was too short. It was agreed that the primary purpose of inspection was not so much to inspect the work of the Ranger, but to see whether the Supervisor was supervising. The subject of responsibility and accountability was taken up, and in this connection it was brought out that the "job sheet" would be a great help in gaining a clearer picture of each man's responsibility.

Forest Service Meetings to be Held: The first of a series of meetings in Engineering was held last evening between 4:30 and 5:30 o'clock. These meetings have been started for the purpose of getting ideas from all members of the office on all questions relating to the work of the office. It is the intention to hold these meetings every Tuesday afternoon until the field season opens. All members of the Forest Service are invited to attend any or all of these meetings.

Mr. Rutledge opened the meeting last evening with a short talk on the advisability of getting together meetings, with a view toward increasing the interest of the members in the work, the securing of more and better maps of the Forests, and the taking of greater pride in the work. Mr. Wright led the discussion by reading a portion of the proposed National Forest Manual on maps and surveys.

Persistence Pays: In October last, Ranger West of the Wasatch, about noon, saw a surveying party pass his station in an automobile. Two or three hours later, having gone up the canyon, he found the party surveying in the midst of a fire to which they were paying no attention. He called upon them to assist in extinguishing the fire, which they did until evening, when they returned home. The fire, however, burned two more days. After it was out, the Ranger interviewed the men separately, and while all of them denied having set the fire or having knowledge of how it occurred, the head of the party stated that he was responsible, being in charge of the work. An effort was made to secure settlement in the sum of $50.00, but letters from the Supervisor were ignored.

About two weeks ago a complaint was lodged by the Ranger with U. S. Commissioner Van Pelt, Salt Lake City. Defendant, the man in charge of the party, put in his appearance and pleaded "not guilty." He requested that his hearing be postponed, which was done. Saturday a draft was received from him in the sum of $50.00, which he tendered as a fine in lieu of going to trial.

Educational Cooperation: On Wednesday night at the Cascade Theater the Foresters from Crawford Station, H. J. Burr, D. Russell, Lorin Wellman, and John Parker put on, in behalf of the Forestry Department, a very interesting, educational and instructive picture display from reproductions of scenes in our National Forests, interspersed with readings and talks by each of the Rangers on the whyfor of the Service, the work of the Rangers, and on fire control; to give the general public an idea of what the Forest Service is doing to protect our forests and that we may know the conditions, and on going into the woods on our camping trips to observe the rules and do our bit to help in this great work of protecting our forests from its worst enemy, fire.

DISTRICT 5 - CALIFORNIA DISTRICT

Mammoth Sale Approved: On the afternoon of April 3 there was completed one of the important steps in the largest timber sale transaction that has ever been negotiated by the Forest Service. At that time the bid of the Fruit Growers Supply Company, of Los Angeles, for 946,000,000 ft. B. M., more or less, of timber within the Lassen Forest was accepted by the District Forester. There remains now to complete the contract with the Supply Company.

The contract will cover a period of twenty years at the minimum and 31 at the maximum. The stumpage under present prices is valued at approximately three and one-half million dollars. The prices are subject to reappraisal at periodic intervals throughout the life of the contract. It is expected, with the cooperation of the company, that the production of timber supplies will be placed on a sustained yield basis, the company agreeing to institute fire protection and forest practice on the lands which they now own.

The consummation of this deal is an epoch in forest management in this District.

Authority Cheerfully Given: The Supervisor's office has been endeavoring to secure from owners of private land written authority to remove advertising signs. Following are some of the replies received:

"This is your authority to tear down any advertising signs on my property in the mountains, or on any property that I control. Go to it!

Yours truly,
(Signed) ED FLETCHER."

"We are in accord with your campaign to remove advertising signs, and anything of that character which is a blot upon the landscape, and are willing to cooperate with you in the manner suggested in your letter of February 20.

"We therefore give you authority to tear down any and all advertising signs that might be posted on our land within the boundaries of the Cleveland National Forest. Yours truly, (Signed) JOHN A. FAULL, Manager, Lake Hemet Water Co." (Cleveland)

Lion Hunters on the California: While returning to camp somewhat disconsolately from an unsuccessful attempt at photographing deer, Messrs. Redington, Nelson, Mace and Durham struck some tracks in a snow bank about a quarter mile from camp, which were pronounced by experts to be lion and at the most not over 2 hours old.

The party set out post haste for camp to get Ned Cooper, the packer, and his hound, Coffman and Fair delaying only long enough to photograph the unblemished tracks.

Returning, the hound was eagerly led up to the place - and sniffed disgustedly at his own tracks made the day previous. Incidentally, Mace had brought his riata to rope the lion when it was treed, a la Buffalo Jones.

Mr. Redington Addresses Key Route Employees: The District Forester gave an address on the evening of April 4 to about 100 employees of the Key Route System (San Francisco-Oakland Terminal Railways Company). These men have united into a club for educational purposes to secure information concerning affairs outside of their own line of work. The club consists of conductors and brakemen (in the train service), electricians, and other employees of the company.

The audience was a most appreciative one, a large number of those present requesting additional information as to the recreation facilities of the National Forests. The club is to consider the proposition of the establishment of a camp on some National Forest for the benefit of the employees.

Mebbo So!: Bill Freer, a gentleman of unquestionable veracity, tells us that his horse is so well trained that when he is riding along telephone line the animal will stop instantly at every break in the line with no prompting whatsoever from Bill. Who questions the old term "horse sense?"

DISTRICT 6 - NORTH PACIFIC DISTRICT

Fungi and Building: A carload of decayed Douglas fir and incense cedar logs was recently shipped from the Cascade National Forest to the forest pathology branch of the Forest Products Laboratory at Madison. There the logs will be sawed and the lumber kiln dried to determine whether the temperatures of commercial drying are sufficiently high to kill the fungi causing decay in these woods. This is of importance in connection with building operations, since wood with incipient decay is not uncommonly used.--J.S.B.

Catching 'Em Young: Supervisor Weigle of the Snoqualmie has recently taken on the responsibility of giving the conservation and forestry tests to the Boy Scouts of Seattle for Service badge.

Tell It To 'Em: A good example of hidden news values is shown in a recent use by the Wallowa Sun of Wallowa, Ore., when it devoted 37 inches of space to Supervisor Billing's annual grazing working plan. After approval, the most important features of the plan were given to the editor,and since a large part of his readers were interested in the stock business he made very good use of the material. Here is an excellent example of use that can be made of regular reports that have to be submitted by Supervisors from time to time, and which one would hardly consider as having news value.

The Whitman got 23 inches on the front page of a Baker paper from the Grazing and Timber sections of its Statistical Report. Who said "No News?"

A Firm at Yakima has applied for a grazing permit to run buffalo on the east side of the Rainier Forest. And they say the Chugach is going to graze reindeer! And the Santiam was reported to have walrus! Bring on your hippopotamus, Olympic!

DISTRICT 7 - EASTERN DISTRICT

The Board of Trade of Brevard, N. C. is to cooperate with the Forest Service in establishing picnic and camping grounds along the Pisgah motor road by voting funds necessary for the construction of fireplaces, developing of springs and other essential improvements.

In Preparation for the Coming Tourist Season members of the Pisgah Forest force have been busy, under the supervision of Chas. G. Mackintosh, constructing fireplaces at two camp grounds on the Pisgah. Mr. Mackintosh is a landscape architect, who studied under Dr. Frank A. Waugh. A large fireplace and two smaller ones were constructed in Frying Pan Gap, which has an elevation of 5,000 feet and overlooks most of the Forest, and one in the Pink Beds, which will be the central camping ground of the Forest with almost unlimited room for expansion. Another has been constructed at Lower Davidson River at the White Oak Springs. Outside toilets were constructed on the same grounds, and the springs walled up and made suitable for use. In addition to this work, Mr. Mackintosh made detailed plans for a number of other camping sites along the Pisgah motor road, which will be developed as rapidly as time and funds will permit.

Mr. Mackintosh also designed an entrance for the Pisgah Game Preserve. Two large poplar logs with the bark left on them were set up on either side of the road. These logs are about 30 inches in diameter. The upper end is nosed down to 6 inches in diameter and surmounted by a 5-inch block of persimmon, which also had the bark left on. On top of these small blocks were erected a set of deer antlers and from the outer tines of these antlers will be suspended a sign properly lettered.

Delay in getting out this issue of The Bulletin is due to installation of new machinery in the multigraphing section.--Editor.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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WHEN SHOULD STOCK BE ADMITTED TO THE RANGE?

by

C. L. Forsling, Washington

With the grazing season close at hand, it is a good time to stop and consider whether or not stock are being admitted to the range too early.

Premature grazing is, no doubt, as responsible for the present run down condition of many ranges as any one factor. Investigations have shown that the forage plants must have a good growth before grazing starts in the spring if the range is to be expected to produce the normal amount of feed year after year. Contrary to general opinion, plants need leaves to grow as well as roots. The leaves take important elements from the air, which are combined with other elements that have been taken in by the roots and carried in the "sap" to the leaves, and in the leaves the plant manufactures food necessary for growth that in turn furnishes feed to the stock. The leaves may be considered as the stomach of the plants. To graze the leaves as soon as they appear above the ground in the spring results in literal starving of the plant, and if continued year after year eventually kills it. Furthermore, the first green feed is scattered and is so very watery that a cow has to graze a big area to get a "fill," and what she gets is so "washy" it is not very strengthening. When stock enter the range in poor condition, as is often the case in the spring, this feed is insufficient to support them satisfactorily, and spring losses are often heavy.

Results obtained so far in the study of the problem at the Great Basin Experiment Station indicate that when the grasses as a whole have attained a height of not less than six inches, the range may be grazed without any great danger to the forage. Naturally, there is a good stand of forage when the main grasses have reached this height, and stock will do well from then on. This height of the grasses, then, should be a guide as to when the grazing season may begin.

The problem is complicated further, however, by the fact that all the range is not ready at the same time. On less exposed slopes and at higher elevations the forage starts later than lower down or on more exposed slopes. To wait until the last of the range is ready for grazing may be later than the stockmen are able to keep their stock elsewhere, and it will be necessary to admit them as soon as the early areas are ready. In such cases the stock should be confined to those areas.

With sheep, there is little difficulty in confining them to the proper areas at the right time, since they are under close control. But with cattle the problem is more complicated, since there are rarely ever barriers between the range that is ready first and that which is ready later. A case may be cited in District 4, where considerable work has been done to solve the early grazing problem, to illustrate how the situation was actually handled there.

The early range of this unit consists mainly of very steep slopes, interspersed with narrow canyons. Water is none too plentiful. Former management consisted in turning the cattle loose at the forest boundary and in the canyon bottoms early in April. No salt was placed out at this time and no herding was done to properly distribute the cattle. They were left to go where they chose, which was mostly to drift up the canyons to the more favorable areas on the higher range. Salt which was put out later was usually not put in the right places or in the right amounts at the right time. The first intensive study of this range early in the season showed that the established opening date was somewhat too early for even the earliest slopes, and that practically all of the cattle were on range by the latter part of April, which was not ready for grazing until after June 1, and much damage was being done. A lot of forage was being wasted below the June range and favorable areas were being injured by stock congregating on them. It was apparent that if the upper range was to be saved from being practically denuded, either the opening date would have to be changed to about June 1 with the management then being practiced, or with an earlier opening date the cattle would have to be kept on the low range until June. Since the permittees were not able to care for their stock off the Forest until June, it was necessary to devise a plan that would allow use of the various parts of the range only as they became ready for grazing. At first it seemed the only practical solution was to build many miles of drift fence at the lower edge of the June range. This would have been expensive, and it was decided to try control by salting and herding with only a few short fences in the main gaps and canyons.

A detailed plan was worked up showing the boundaries of each seasonal zone, dates between which each could be grazed, and the carrying capacity for that period. Salting and herding plans were worked out in accordance with these factors. The stockmen's part in the plan was handled by an association who hired men to herd and salt the range in accordance with the plan.

The results even the first year were very gratifying, as well as surprising, to both Forest officers and stockmen. It was definitely shown that the salting and herding, with a few short fences, would practically solve the problem. The plans have since been intensified, and the carrying capacity, season and salting so worked out for each natural subdivision, that by the time another area is ready, the forage and salt on the earlier one is gone. The cattle move to the salt on the next area with scarcely any driving. With the proper distribution of the salt each area was evenly utilized and overgrazed areas given a chance to recuperate. With the proper salting, the main job of the herder was found to be keeping the cattle out of the bottoms of the canyons and from drifting up to the higher range. Besides the benefit to the range, the plan has resulted in about six weeks grazing being secured on lower ranges which was formerly wasted. The results have been so satisfactory and have shown so clearly their worth to the stockmen that the association is very enthusiastic about carrying out the plans further, and other associations in that vicinity are rapidly falling into line.

Obtaining proper seasonal use for different units of Forest range is distinctly a responsibility of the Forest Service, and we have already waited too long in many cases to correct present use. Opposition may develop on the part of the stockmen where the opening season is made later, and they will claim that it is impossible to hold their stock elsewhere several weeks to a month longer. Shortening the season a little each year until the desired date is reached with proper management to hold stock from the later ranges will bring about the desired result with minimum disturbance of the stock business, and when the stockmen see the practicability of the system and the better results on the summer ranges they usually favor the plan.

Pouring Oil on Untroubled Waters

A representative of the Bureau of Entomology reports that during a visit to one of the California Forests about two years ago, he found that oil had been poured on a marsh under the supposition that it was a breeding place for mosquitoes, while as a matter of fact, the real place was a big pool within a stone's throw of the marsh. The Bureau of Entomology points out that the mosquitoes of the Northwest are peculiar insects, especially in their breeding habits, and are quite different from the mosquitoes of the South. Consequently anyone attempting to control them is in need of expert advice. The Bureau suggests that Forest officers in the North or West who wish to inaugurate anti-mosquitoe campaigns will profit by first sending samples of the mosquitoes with which they have to deal to Washington for name and information as to where their breeding places will probably be found.--H.I.

What Say?

Silent "Kats" of the Kaibab: Mountain lions may scream, again they may not, but it would appear that if they do they would make the Kaibab ring since, opinions of experts notwithstanding, there are numerous lions on the Kaibab, and, so far as is of record, no one who is reliable has ever heard one scream, although a captured kitten was heard to make a noise similar to that made by a house cat. This, of course, is not conclusive evidence that mountain lions do not scream, but I have spent most of the past twenty years on the Kaibab and other areas on which lions occur and have never yet heard one scream. It might also be remarked that "Uncle Jim" Owens never has heard a lion scream, and he probably has killed more lions than any other man in the United States.--Benjamin Swapp.

They Scream on Ole Kaniksu: While I have not had the forty years of foothill and mountain life experience that our worthy friend Loring of the San Juan speaks of, yet I have other endowments which may qualify me as an expert witness, one of which is, I am a "Missourian" by birth and a Montanan by naturalization, and with twenty-three years residence therein, I still retain that Missouri instinct of "Show Me." I have been shown to my entire satisfaction that at least one mountain lion did scream. It was the summer of 1907 on the Kaniksu Forest in northern Idaho, while following an old and therefore dim section line through a heavy stand of matured white pine and cedar, with an understory of hemlock, that I was suddenly halted (all except my heart and hair) by the most unearthly scream I had ever heard. This was followed by a dead silence of a few moments duration, in which it seemed that the trees of the forest quivered. This silence was quickly broken by the second scream, which indicated it came from a point just ahead and on the section line I was following. The underbrush obstructing a clear view ahead, I dropped to my knees to detect if possible the "Whirring Wimpers," but lo, it was a she lion with two kittens and a fresh killed deer. During the few seconds I was hesitating to offset two and a half chains to the west, I actually saw the old mother lion open her mouth and actually heard a third unearthly scream, and thus my "Missouri" "Show me" instinct was satisfied.--Glen A Smith, D-1.

Trout Waters of the National Forests

By A. H. Dinsmore, Bureau of Fisheries

Part II.

What a marvelous addition to the food supply of the people of Wyoming and Idaho has resulted from this introduction of a few small fishes to these two barren lakes! And how important, even though results of such magnitude can not often be attained, that all the barren waters remaining in the Forests and the Parks be put to work.

Following a knowledge of the waters to be stocked comes the question of what fish to supply. As a general rule, the fish already in the waters below will be used. Sometimes it may be desirable to introduce other species, but this should be done only after very careful consideration and consultation with the fish and game department of the State in which the waters are located.

If we consider the almost identical Loch Leven and European brown trouts as two species, and the rainbow and steelhead trouts, which equally resemble each other when acclimatized in fresh water, as two more species, and place under the name of Rocky Mountain or black-spotted trout the many subspecies of Salmo Mykiss which have been described, there are 8 species of trout scattered throughout the National Forests. They are the brook trout, the Loch Leven trout, the European brown trout, the lake trout, the black-spotted trout, the rainbow trout, the steelhead trout, and the Dolly Varden trout. The first four named are fall spawning fish; the next three spawn in the spring. I do not know the spawning season of the Dolly Varden trout.

A description of all these fish, except the steelhead and the Dolly Varden, will be found in "Fishes of the Yellowstone National Park" Bureau of Fisheries Document No. 904, recently published. This pamphlet might well have a place at any Ranger station where these questions are to be considered. Perhaps direct comment on conditions in some of the Forests with which I am familiar may be helpful.

The only fish which should be considered for streams of the White Mountain Forest is the native brook trout. Because the adult trout have been largely cleaned out of the larger streams such as the Saco, the Wild, the Swift, the Gale, the Pemigewasset, and the Ammonuosuc rivers, and the short legal length permits the fishermen to keep the small trout so completely cleaned up in the small streams, there is almost no natural reproduction, and while such conditions continue there is little hope that the rivers can be made to furnish the splendid fishing which under proper regulations might be maintained.

The matter of regulating the fishing, not only in the rivers but also in the streams within the Forest, is vested in the Maine and New Hampshire departments of fish and game, most of the streams coming under the jurisdiction of the New Hampshire Commissioner. Commissioner Bartlett is cooperating fully with the Bureau of Fisheries in furnishing fish for the waters in New Hampshire. So far as it is possible for him to furnish protection, closed zones should be established on the headwaters of all these streams. Generally, this should be all sections of streams above which other fish are found. If it were practicable to refuse fishermen access to such closed waters in the Forests, the work of the wardens would be considerably simplified.

Many of the beautiful streams of the Black Hills Forest spring, almost full volume, from the ground in canyon bottoms or gulches, or even on the open country beyond the Hills. As in some other sections of the West, private water rights for purposes of irrigation or mining are assumed to carry private right also to the fishing. Even if such rights are not assumed to give control of the fishing, the diversion of water for these purposes is likely to be very destructive to fish life, many fish passing to the ditches where they are left stranded. Laws provide for proper screens to prevent this, but compliance with such laws is often found to be impracticable and they are not complied with.

Except that suckers common to the Missouri River Basin are found up to impassable natural obstructions, all Black Hills streams were destitute of fish. Brook, Loch Leven, black-spotted and rainbow trout have been planted almost indiscriminately during the past 30 years. The fall spawning brook and Loch Leven trouts seem to have been much more successful than the other two, which are spring spawners. Perhaps climatic conditions are more favorable here to natural reproduction in autumn than in spring. Both brook and Loch Leven - the latter in limited numbers - are propagated at the station of the Bureau of Fisheries at Spearfish, South Dakota, from which point both fry and fingerling fish should be available for the Black Hills and Harney Forests.

A peculiar condition exists in some of the Plateau forests of Colorado. The Battlement Forest is a notable instance. A number of beautiful lakes here, some of them of considerable size, have been reservoired for irrigation purposes. These lakes are wonderfully productive of fish life, but their outlets are now ditches through which the water is spread over the great Delta Valley, so that fish probably have little opportunity to pass to the Gunnison River.

When the writer was familiar with them, the right to the water was assumed to include the fishery rights and the public was quite generally excluded. This condition resulted at the time in much ill will, culminating in manslaughter and arson.

The Battlement is a favorite camping place for inhabitants of the Grand and Gunnison River valleys, and it is unfortunate that the fishing is not vested in the Forest Service for the benefit of the public.

Perhaps the most promising area for the fisherman of the future is the Yellowstone National Park and the National Forests around it. For, although the Parks and the Forests are maintained for different purposes and are under different administration, their water systems, at least in so far as fishing is concerned, should be considered as an entirety.

Not only do all the rivers leaving the Park pass through the Forests on their way to the settlements, but many of them have important tributaries which head in the Forests. The importance of stocking all these tributary streams has already been shown. In this work there should be the closest cooperation between the Forest Service, the National Parks Service, the Bureau of Fisheries and the Fish and Game departments of the States of Montana, Wyoming and Idaho. Particularly should the States be held to a large share in this work, at least in so far as waters in the National Forests are concerned, for they derive a considerable income directly from the tax imposed as non-resident fishing and hunting licenses upon visiting sportsmen.

While the water from these rivers is utilized for irrigation purposes, far less harm probably results from this cause than in other sections, since diversion of the water occurs far distant from the source streams and is in no case, as yet, so complete as to leave completely dry stream beds.

The streams within the Forests of the Pacific Coast States present still another problem. For, in so far as spawning fish from the ocean have access to them or they receive artificially hatched salmon, these are the nursery streams of the young salmon which in time, passing out to sea, return to maintain one of the most important fisheries in all the world. In the introduction of fish into these waters, therefore, the effect they may have upon the salmon fishery should always be kept in mind.

One or all of three species, the rainbow, the black-spotted, or the Dolly Varden trout, may be expected to occur somewhere in any given river system, perhaps associating with the young of some or all of the five species of Pacific Coast salmon and the sea-run steelhead trout. Many of the high up, isolated waters, however, are still without fish of any kind. (To be concluded).

A Deer Inventory

By Paul G. Redington

The Columbian blacktail deer is found in fairly large numbers in northwestern California. While scattered during the summer in the timber and oak brush of the higher elevations, this species descends to lower levels in the late fall and lives during the winter season below the snow line in the chapparal and glade country which borders the canyons of the many streams of this section. The winter ranges of the deer are not contiguous, but consist of comparatively small areas separated from one another by the high ridges between the drainages. The officers of the California National Forest have long known that deer in large numbers were to be found and easily seen on these winter feeding grounds. Figures given as to the number of deer had interested several of us, and in order to determine whether or not the local officers had been "seeing things" or were really veracious, an expedition was organized in early March, the members thereof being Supervisor Coffman, Deputy Supervisor Mace (now Supervisor of the Trinity Forest), District Ranger Durham, Assistant District Forester J. W. Nelson, Paul J. Fair, in charge of exhibit and photographic work in the District Office, his son "Billy," (a boy of twelve who, on natural history stuff, had everyone in the party faded but his father), and the writer. We spent six days on Thoms Creek in the northeastern portion of the California Forest, making our headquarters at a cattleman's cabin. We were packed in and covered the country on horse and afoot.

In the six days 2,000 deer were actually counted - as high as 300 in one bunch. We got 1,000 deer in one day. Our final estimate was that there were 4,000 deer in the area covered, for we figured that the dense brush areas which we could not penetrate, and which were a favorite haunt of the deer, kept at least half of the deer out of sight. The territory covered by the count was about 8,500 acres lying in a strip 1½ miles wide by 12 miles long on the north side of the canyon of Thoms Creek.

The male deer had shed their horns before we got into the country, and it was difficult to distinguish sex, except in the case of the older and larger bucks. The majority of the deer were in good condition, the younger deer showing up as the poorest of the lot. Last year's fawns were comparatively few in number. Three freshly killed carcasses of coming yearlings were found, evidently brought down by coyotes. About seventeen other carcasses were found, some apparently killed by lions, probably some by coyotes, and some undoubtedly had been killed by poachers. The scarcity of last year's fawns led us to conclude that either predatory animals had taken a heavy toll or else that mature bucks were scarce.

Hunters are allowed to kill two bucks. There are many hunters and undoubtedly there is considerable poaching out of season. We believe that steps should be taken, first, to get after the predatory animals more vigorously; second, work for a reduction in the kill limit to one buck; and third, to more energetically enforce the existing game laws.

If these things could be done, an inventory three to five years from the present time should be made over the same area, and the conditions found to exist at that time should certainly indicate if further protective measures need be adopted or if restriction might be made easier as to limit of kill or length of hunting season.

The deer on Thomas Creek are by no means all of the deer on and adjacent to the California Forest, for it is estimated that the actual number might run as high as 35,000 to 40,000. Besides that, the same species of deer is found on the Trinity and Klamath Forests and farther west. If adequately protected with a proper kill limit in operation, this species of deer ought to furnish sport and enjoyment to lovers of wild life and hunters for generations to come.

On the last day of our stay our packer got a mountain lion. We had six cameras in the outfit and secured many views, not as good as we hoped for, but fairly satisfactory. The weather was cloudy most of the time.

The trip was well worth while. I doubt if our experience of seeing 300 deer in one bunch or of counting 1,000 in one day can be duplicated on any other Forest in the United States.

Elaboration vs. Simplicity in Work Plans

Work plans vary from the very short to the very long, - from the very simple to the very elaborate; and wherever Forest officers foregather there may be heard Simplisimus arguing that work plans should be short and simple, while Elaboratisimus contends that plans should be not so short and not so simple.

Here is what Supervisor Sylvester of the Wenatchee says about it in a letter to his Rangers:

"My idea of the form a plan of work should take is as follows:

"It should be a memorandum of program of work to be done without trying to fix dates for its accomplishment, except such jobs as are required to be completed by a certain date. It would be well to number or otherwise designate the order of importance of the different jobs or the order in which they should be completed. The unforeseen work, as it develops, should simply be added to the program and marked "Special" or the order of completion be readjusted.

"This program should not be prepared, then filed away and forgotten, but should be kept where it can be consulted from day to day. I should say that the best place for it is your notebook. Set aside several pages of your notebook for this purpose. Work to be done should be set down; as it is completed it should be checked off; additional work called for or developing should be entered and as it is completed checked off in its turn. You need not send your program of work to me for approval, but as I have opportunity I will check your plan in the field, discuss it with you and see how well you are getting along with its accomplishment. You should constantly check your own diary back against your program to see if you are getting the results you want. Used in this way, I think we can get from a personal plan of work the results that the Forester desires."--R.H.

MATHER FIELD IDEAS

Standardization of Tools vs. Localism

By Wm. B. Osborne, D-6

Should local preference be respected or ignored?

What tools should be designated as standard for fire line construction?

What we all want are tools which will be most effective in the hands of the average crew employed. What we want to avoid is personal preference or hobbies. The individual is apt to argue for the tool which he can handle to best advantage himself and fail to base his judgment on actual accomplishment of crews. Local preference, particularly if it prevails throughout a large territory, should not only be respected, but very carefully studied, as it is very possible that there is some very logical and practical reason for the preference.

I do not believe that there is a single man in the Washington Office or the District Office who would advocate making a certain tool, no matter how enthusiastically recommended by a certain locality, a standard for the District or Service until he had actually seen it demonstrated throughout a wide range of conditions.

We are all working for the same thing, the tools which will give the most effective results. I believe we are all open-minded and that we realize fully that any tool which has been thoroughly tried out over a wide range of conditions and adopted as a standard in one District must have points of real merit, and that if our conditions are in any way similar, it is not only worth investigating, but actually spending a little money on and trying out over a wide range of conditions in our own District or region. It may be just the thing we have been looking for.

The real test of tools is on the fire line. If we have an assortment of tools, the ones best adapted to any particular kind of work will be sorted out and the inferior ones will be left in camp. There is no need for argument; the question solves itself if we simply try them out under a wide range of conditions. An individual may be obstinate, but crews scattered over a large territory under a wide range of conditions are not. In short, it seems to me that tools should be introduced and not imposed. A standard is a rather sacred thing and a tool is not entitled to the name until it has proven its worth in the locality where it is to be applied; then it becomes a standard to stick with until something is proven to be better. If it has the merit it will stand on its own legs. All that is needed is to introduce it and give it the acid test.

In this respect, however, I feel the Service has been decidedly negligent and not nearly as progressive as some of the private associations who have gone a long way toward standardizing equipment through introducing it. I do not feel we have given the selection of tools the careful study it deserves.

The main reasons for our slow progress in these matters are:

1. Lack of assignments or visits between Districts which would enable us to recognize points of similarity of conditions and to capitalize on the new ideas and progress which our neighbors have made.

2. Total lack of meetings of this kind where equipment from all Districts can be brought together and the peculiar merits of each item thoroughly discussed.

3. A blue print versus sample method of introduction.

4. The lack of any definable policy or active leadership and attention to this matter.

5. A possible trace of jealousy between Districts in such matters, although, personally, I believe that this point is apt to be overexaggerated and a result of lack of knowledge as to similarity of conditions and actual results that are being attained on the one hand, and on the other a modesty or backwardness on the part of any District to do anything which might have the appearance of butting in on the other fellows' business.

6. Lack of any special fund which might be used for developing and introducing new equipment.

7. The June 30 method of buying, which in itself almost prohibits securing any new or special equipment which is not obtainable in local markets.

Now in regard to the tools which might be designated as standard, it seems to me that tools within each District might well be divided into three classes:

First, a list of standard tools including only those which are in very general use throughout the whole or a large part of a District.

A second list for standards within special regions only, and a third list would include experimental equipment and specialties which are not yet in general use or thoroughly established.

Thus far I have spoken only in regard to kind of tools. I believe it is of equal importance to work out standards as to quality, weight, dimensions, etc., of metal parts and material, shape, etc., of handles. In fact, a great deal of attention and study should be given to this matter, including thorough tests on the fire line, and the results boiled down to detailed specifications or actual brands and patterns for each Standard, Special or Experimental item.

My recommendations are:

1. That this meeting go just as far as it can through a special committee or otherwise in adopting common standards and specifications of tools.

2. That three classes of tools be recognized, namely: standard, special, and experimental.

3. That special attention be given to the introduction and fair trial of any new tool of apparent merit.

4. That in the event of funds being available for winter or early spring purchases, preference be given to such items of special equipment as can not be purchased locally on short notice.

A Possible Cause of Failure in Planting and a Remedy

By W. G. Wahlenberg, Priest River Experiment Station

During the dry growing seasons of the last few years in District 1, there has been heavy loss in field planting. About 75 per cent of this loss is estimated to have taken place the first season after planting. And the cause of the loss appears to be chiefly the drying out of the soil to a level below that reached by the root tips.

In the present nursery practice it is the general aim to produce a fibrous, bushy root system, providing a total absorbing surface which is large in proportion to the evaporating surface of the crown. To accomplish this the natural taproot growth is discouraged by root pruning. Roots are pruned to a length of eight inches. Eight inches is also the length of the mattock blades and the depth of the planting holes.

A yellow pine planting area having a northwest exposure was examined in the middle of July, 1921, and actually showed no fresh soil at a depth of twelve inches. As outplanted nursery stock makes practically no growth the first season, the effect of the drying out of the soil to below eight inches can be readily appreciated.

An experiment was conducted last summer, consisting of two series of western white pine plants, one containing 600 plants with pruned roots and one 400 plants with unpruned roots. The unpruned roots averaged 10 to 11 inches in length and the pruned roots were 8 inches long. The loss at the end of the first growing season was 43 per cent in the case of the unpruned stock and 59 per cent in that of the pruned, or shorter rooted, stock. The two series of plants had received identical previous treatment in every way and were planted together on the same site.

Since we can not predict our dry years and the drying of soil below eight inches, we might be highly repaid for digging deeper holes and inserting longer roots. At the age for planting, both white and yellow pine usually possess roots much longer than eight inches. An additional inch or two might enable hundreds more to survive the dry spells.

Arthur W. Sampson Leaves

by Will C. Barnes

Ladies and Gentlemen of the Forest Service, meet Professor Arthur W. Sampson, Associate Professor, Chair of Range Management and Forest Ecology, University of California, Berkeley, Calif.

Once more has a State University made a raid on our little flock of grazing men and, like some predatory bear looking for a choice morsel, has carried off to the Pacific Coast Dr. Sampson, who has been so long connected with our work that none of us had any idea he could be pried loose from it, no matter what the inducements were. The position which was offered Dr. Sampson, however, was of a kind which would be difficult for any man to resist.

The University of California has always been a leader in educational lines. For the last several years they have been paying a great deal of attention to our range investigative work in connection with the grazing of cattle and sheep, California being heavily interested in that line of agricultural activities. Some time ago, feeling that they should have a specialist to head this work, the University intimated to the Forester their desire to secure Dr. Sampson, who has been so successful along his lines in the Service. Naturally, we did not want to lose him, but feeling that our loss would be the State's gain, and his position in Berkeley would give us much closer cooperation along grazing lines, we agreed that if he desired to make the change there would be no objections from the Forest Service.

After graduating from the University of Nebraska, where he secured his B. A., Sampson entered the Service in May 1907 as a plant ecologist. A college athlete of high attainments, he brought with him a four quart hat full of medals of every size, shape and material, except leather, and with a pair of legs that could outrun anything in their line. In 1913 he was granted a furlough and entered John Hopkins University to pursue research work mainly in plant physiology, coming back to us with another degree, that of Ph. D. When the Great Basin Experiment Station was established, Sampson was the logical man to place in charge of it. His work there has been of very high grade and the present standing of the station among not only grazing men, but scientists, botanists and plant ecologists interested in the many phases of plant investigations which Sampson is carrying on at the station, has put him at the head of his class.

WASHINGTON NOTES

Assistant Forester Roy Headley and Inspector Evan W. Kelley have returned from the District allotment conferences.

Associate Forester E. A. Sherman represented the Secretary of Agriculture at the Arbor Day exercises held at the Lincoln Memorial by the Washington Federation of Women's Clubs.

Please Pass the Ouija Board: "Dear Sirs: I would like to know what day in May I can cut off trees to kill their roots and branches. I know there is one such day but can not find out from no one round here."

DISTRICT 1 - NORTHERN DISTRICT

Homestead Entry Surveys: Up to the present time the Forest Service in District No. 1 has made 1,053 homestead entry surveys. In addition to this number, 35 homestead entry surveys were made by the General Land Office, making a total of 1,088 surveys executed.

There still remain 220 claims to be disposed of. These are divided into three classes as follows:

Class 1 consists of 41 entered claims, which may be adjusted so that no entry survey will be necessary.

Class 2 consists of 66 unentered claims, which it is planned to survey, inasmuch as they are homestead units in the National Forest subject to settlement and entry and eventually will require an entry survey. Up to the present time, only the entered claims have been considered for survey.

Class 3 consists of 113 entered claims, subject to immediate disposal. It is contemplated that 90 claims of this class will be surveyed this field season.

Examiner H. T. Gisborne has been transferred from District 6 to the Priest River Experiment Station, where he is taking up the work of fundamental fire studies. Previous to his transfer Mr. Gisborne spent two years as forest assistant on the Whitman Forest and about one year at the Wind River Experiment Station.

The Annual Planting Report for District 1 shows that 3,895 acres were planted in western Montana and northern Idaho during the calendar year 1921. The average cost per acre was $10.80, and the average number of trees planted per acre was 725.

A general review of past plantations shows that planting during favorable years, such as 1915 and 1916, has been almost uniformly successful, and that most of the failures have resulted from excessively dry summers, such as 1914 and 1919.

The District plans to plant consistently about 3,500 acres a year in the future. Most of the planting for the next few years will be concentrated on a large area on the Coeur d'Alene Forest, which burned in 1910 and again in 1919.

Lumberman U. S. Swartz is making an extensive reconnaissance of about 200,000 acres on the Beaverhead Forest for the purpose of determining the feasibility of developing a very large tie timber chance on the Big Hole drainage. He encountered 15 below zero weather at Jackson on April 11, and reports from 1 to 10 feet of snow all over the Big Hole Basin country.

Swartz is covering from 15 to 20 miles a day on snowshoes, and is taking on all the Rangers in the Big Hole in turn. This job should demonstrate the feasibility of doing more extensive timber survey work in the winter on snowshoes in the eastern Montana Forests, and is also showing up our extraordinary lack of authentic information on timber stands. A very large part of the area which previous maps show as merchantable timber is proving to be lodgepole pine from 4 to 10 inches in diameter and too small for ties.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Assistant District Forester Granger and John McLaren, Chief of Fire Protection, left for a six weeks trip to the Lake States Forests for general inspection of organization plans with particular reference to fire.

H. N. Wheeler, Chief of the Office of Public Relations, has joined the exhibit car of the Duluth & Iron Range Railroad Company at Duluth for an extended trip, including parts of Iowa and Illinois. The exhibit will feature the Superior National Forest.

Another Recreation Association: The Fort Collins Chamber of Commerce has appointed a committee to look into the matter of forming a permanent recreation association, based on the plan of the San Isabel Recreation Association. Fort Collins was one of the first places in this State that started in the recreation game. So far, work done has been carried on by the Chamber of Commerce or the city. These organizations have not been as well suited to do the work as would be a distinct association, the sole business of which is to represent the local people in the development of the recreation resource of the Colorado National Forest near the city.

The Minnesota National Forest is at least in a fair way to become a full fledged National Forest. The Act of 1908 provided the means for disposing of the equities of the Chippewa Indians through sales of timber, the payment for the timber reserved for seed trees, and a further payment to the Indians of $1.25 per acre for the base land, the whole matter to be reviewed by a board of appraisers or commission, one member of which was to be appointed by the Secretary of the Interior, one by the Indians, and a third by the President. While the Act directed the appointment of this commission (forthwith), the members have never been selected. The entire stand of timber on 10 specific sections of land, certain islands and points, is to be retained, and the appraisal of this timber is now under way, with the promise of the General Land Office to dispose of the question as promptly as possible after the data are in its hands.

Resort for Winter Sports: Lt. Albizzi, formerly of the Italian Army, and instructor of skiing for his regiment, has come to the District Office to secure information as to where he could establish a center of winter sports in the Rockies. It is his idea to have a place where skiing can be enjoyed and where a bobsled and sledge run of several miles can be built. He is looking for a location where snow stays on the ground through several months and where the daily temperature during that period is freezing or below; also, he wishes to find, if possible, a hotel at that point and have transcontinental train service. His idea is to establish a winter resort on the plan of St. Moritz in Switzerland.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Visualized Education: Forest Service "movies" make impressions. One Supervisor, who has been getting good use of the films that have been available this winter, says in a letter just received: "From my experience with the motion pictures, I am firmly convinced that this is the correct means of getting before the public full and complete knowledge on the use of the National Forests and the need of protecting them from fires." Pursuing this same idea, an eminent educator once said, "What a child hears goes in one ear and out the other, but what he sees remains because there is no hole in the back of his head through which it can escape."

A New Activity: An inquiry has just been received from a party in Texas, asking what procedure is necessary to obtain a permit for collecting medicinal herbs on a National Forest.

More Than Fivefold: Verily the way of the trespasser is hard and the longer he takes to settle the harder the way. Just recently there was a trespass case settled on the Prescott in the sum of $69.00, that grew out of the failure to pay $13.00 in grazing fees in 1920.

Breaking Into Big Print: Tally's "Contour" takes high level. The April, 1922, Scientific American gives a full page with four illustrations to a write-up by S. R. Winters of M. W. Talbot's paper and lecture entitled, "What and Why is a Contour?", which was presented before the 1921 Supervisors' meeting in Albuquerque. Mr. Talbot is to be congratulated upon the well deserved recognition of this production by such a high grade publication as the Scientific American.

Mesquite, an Appreciation: "The mesquite tree is the most generally useful tree within its range growing, as it does, under very adverse conditions. It is the universal firewood, makes excellent fence posts, stock fatten on the leaves and buds, bees make fine honey from the flowers, the gum is of commercial value, and the Indians make meal of the beans. The sapwood is thin and the preponderance of heartwood gives it good heating and lasting qualities. In Arizona and New Mexico the tree sometimes assumes an underground form with tremendous root development and with only small sprouts showing above ground. In such cases cordwood is produced by mining for the heavy roots. Mesquite was introduced into Hawaii many years ago. It was there spread widely and has become one of the most useful tree species.

Ranger Bill Says:

A short look ahead is often worth a heap more than a long hind-sight.

I'll never pick another S & T from a Civil Service photo., remarked the Super. while correctin' his dictated letters.

'Pears like a lot of fellers think Standardization's a good word gone wrong.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Addition to be Made to the Uinta: A bill has been introduced in the House of Representatives, providing for the inclusion of certain lands to the Uinta National Forest, which were at one time set aside for a reservoir and other purposes in connection with the Strawberry Irrigation Project.

Supervisor Mace opened the Forest Protection Week campaign in this vicinity a little ahead of the regular schedule by a talk given at the Branch Agricultural College to about 100 student members of the Agricultural and Craftsmens Clubs, including several members of the faculty. The talk was given at the request of the Craftsmen's Club and covered a general outline of the Forest Service organization, the work of the different branches, fire protection, watershed protection, etc., closing with an appeal for observance of Arbor Day. The Supervisor says the astonishing thing about the performance was that the boys showed great interest throughout the 45-minute ordeal and several took occasion at the close to ask questions and express their appreciation. They carried off all the "fire literature" available and a number of bulletins No. 790.

Ranger Fears has been experimenting during the winter, being somewhat of a blacksmith, with a combination shovel and hazel hoe. According to the boys at the ranger meeting at Boise, they have experienced considerable difficulty because the hoes would not stay on the handle after it had been dressed down to fit the hoe. Ranger Fears has found a method by which the hoe can be made to stay on the handle. He has given it a pretty severe test; however, he is not satisfied with his achievements, and is now working on another method and will have it completed soon for report to any of the other Forests desiring to profit by his accomplishments.

Is Forest Protection Week Doing Any Good? If the number of man-caused fires that have occurred each year since we have kept records is plotted on a piece of cross-section paper, it is easy to see that while there is a tremendous fluctuation in the number of these fires from year to year, one year being pretty good and the next pretty poor perhaps, the general trend is upward all the time. That is, we are recording more man-made fires as the years go on instead of fewer. Of course, we think that this is largely due to our improved methods of detection and the reporting of fires which in the earlier years probably would not have been mentioned.

This very thing came up at the allotment conference while Mr. Headley was here, and he expressed the opinion that while the above excuses were pretty plausible sounding, they had begun to grow stale, and he was inclined to doubt them. Maybe he is right and that man-caused fires are really increasing in spite of all our work done to educate the public.

There is another side to the matter, however. If you take lightning fires that have occurred since we have been keeping records and plot them in the same way, the increase of late years is very remarkable indeed. When we first began to have fire records, we would usually have about one lightning fire for each man-made fire. Now it runs about two lightning fires to every man-made fire. It is a cinch that either the lightning fires are getting over so much more common than they used to be, or man-made fires are actually decreasing. Maybe we are educating the public and maybe we are getting Jupiter sore at us. You can take your choice.

DISTRICT 5 - CALIFORNIA DISTRICT

Market Street Well Signed: Saturday morning George Miller took a supply of fire warnings, Governor's Forest Protection Week Proclamations, etc., and strolled up Market Street. As a result, our signs, etc., may be seen in the windows of about 80 business houses. Everything from barber shops to banks was glad to display them.

A Government Situation: A Forest Service clerk desires a supply of stamps for office use, makes up a 5a voucher for $5.00, and hastens to the post office to get a signature on same.

Post Office Clerk (with conscience) - "Why should I sign this?"

Forest Service Clerk (with anxiety) - "I must have a signature on the voucher before I can send it for payment."

P.O.C. (with C) - "But we have not delivered anything to you - that payment therefor has not been received."

Shades of the crimson ribbon - what to do - what to do.

Spring Has Come, and with it comes the usual joys and troubles. The warm sun is relieving the strain on the wood pile and bringing out the blossoms on the fruit trees, while down in the valley the Basque is cranking up his sheep and preparing for the grade over Greenhorn to the desert where he can once more "no savvy" the Forest boundary.

If anyone wants a burro, they can find them by the score along Kern River between Kernville and Fairview, where they are getting so numerous that they are a regular nuisance. Nobody seems to own them until packing season, then everybody claims them.

The Citrus Grower and Forestry: An article entitled "The Citrus Grower and His Relation to Forestry" by the District Forester, appeared in the California Citrograph for May.

Forestry in Denmark: The District Forester had the pleasure of a call recently from Mr. Axel Elers Koch, of the Royal Danish Forest Department. Mr. Koch is a nephew of Elers Koch, in charge of Forest Management in the Missoula office of the Forest Service. It was learned from Mr. Koch, who is traveling this country to secure an idea of what is being done in forestry, that Denmark has an area of approximately 700,000 acres of forest, of which 130,000 acres are owned by the Government, the balance being in private holdings. The State, however, controls in regulation on privately owned land, the work on these lands being looked after by inspectors of the Government. The forest land is divided into thirty administrative units, with a supervisor in charge of each unit, and under the supervisor are five to six rangers. Besides that, the local people are employed to assist in planting and development work.

For an area, therefore, of one-half the size of one of our National Forests of California, Denmark has a field force approximately equal to the field force on the Forests in this State. It is apparent from what Mr. Koch said that forestry is on a very stable basis in Denmark and that the net revenue from these forests has reached a very considerable figure.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Growing Pains: According to the latest Coast and Geodetic Survey data just received, several of our leading mountains have grown since last we measured them. Now we know why Hood has been blowing a bit the last two winters trying to make herself articulate. Hood is now (or was all the time but we didn't know it) 11,253 feet high - just naturally "growed" 28 feet. Larch Mt. humped up 5.5 ft. more, Chiniders 8 ft. more, Red Mt. (Columbia) rose one foot and Huckleberry Mt. went up 2 feet. Other changes include Powder Mt. on the Whitman, and several Umatilla peaks.

The Movie of a Bug: "The Control of the Pine Bark Beetle," a motion picture story of the "bug that feeds on the bark of the pine," was shown recently in Portland and vicinity at the Y.M.C.A., sawmills, Department Club smoker and elsewhere, and proved very popular. This film belongs to the Bureau of Entomology and was loaned to the District.

Developing an Attraction: The Oregon Caves Highway on the Siskiyou is nearly complete - just a few finishing touches - two or three weeks will do it. The touches will be put on this spring, however. They are mostly due the bridge across Lake Creek. Senator Stanfield has introduced a bill appropriating $30,000 for improvements at the Oregon Caves.

The Guilty Shall Not Escape: It may be recalled that last summer one Lorenzo E. Dole, late fire bug of the Siuslaw and thereabouts, became enmeshed in the tangles of the law, to wit: he was sentenced to serve four months in the bastile (otherwise yclept Hoosegow) for deliberately and with malice aforethought setting or causing to be set numerous and sundry forest fires - et al. Dole begged off, claiming his crops, the fruit of his year's toil, would be wasted were he incarcerated at the time. The Court heard his plea and consented to defer the beginning of the serving of his sentence 'til after the harvest home festivities. Being free from the meshes of the law, pro tem, he ducked to the tall uncut, and did conceal his person for some months, sending from time to time sundry and sassy notes to the minions of the law. However and alas, justice will and shall prevail: likewise your sin will find you out - and it did Dole, for on or about January 27 he was caught, captured and incarcerated, and now languishes in durance vile, and will soon in all probability become a convert to forest protection and fire prevention. Some folks are hard o'learning.

The newspaper publicity given his case will probably be worth all the timber his fires have burned.

DISTRICT 8 - ALASKA DISTRICT

Fox Pirates on The Chugach: The general depression which is being felt through all branches of industry has apparently caused the fish pirates of Alaska, who have been a thorn in the side of the canners for the past few years, to turn to other channels. Probably with a view to yearlong employment, they seem to have turned their attention this past winter to raiding fox islands.

Several reports of heavy losses from this source have reached the office of the Chugach. On Axel Lind Island in Prince William Sound, 38 skins were stolen from the curing sheds one night in January. Tracks in the snow showed that the pirates had landed in a skiff, removed at least one live fox from a trap, proceeded to the curing shed, which is situated near the residence where several men were sleeping at the time, and removed 38 skins. To date no clue has been found which might lead to the identity of the thieves. As the skins are valued at an average of about $175 each, the loss is a very heavy one.

On Fleming Island evidences were found which lead the owners to believe that pirates were operating there during the trapping season. The signs indicated that they landed on the island at night and removed live foxes from the traps. The owners estimate their loss at between 50 and 60 foxes.

The owners of Storey Island fox ranch report a loss of 45 skins from a fire which burned a building in which the skins were stored.

Aside from these losses, the business this year averaged up very well. The harvest from a few islands is given below:

Naked Island	62	skins
Bald Head Chris Island ...	16	"
Axel Lind Island	110	"
Wingham Island	113	"
Goose Island	26	" and 5 pair breeders

The Dutch Group, which was stocked with three pair of foxes in 1919, reaped its first harvest this year, netting 16 skins, in addition to which 16 pair of breeders were liberated from the traps.

There are now 26 islands on the Chugach under permit for fox ranching and several applications pending. An application was recently received for an island on which to raise 'coons.--L.C.Pratt, Chugach.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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"AMEN - GRANGER"

By H. O. Stabler, District 7

Granger has said a mouthful on this "crushing amount of office and paper work" proposition. It is a bugbear that should be permitted to "hole up" through one full summer, and the species might become extinct. The great majority of us are not overworked, and those who do a little worth while planning are not "crushed" so that you can notice it. Some acquire the habit of raving at Service and Governmental red tape - it is a habit that grows on one. Why, there was once an express shipment (just a small one, unfortunately) which went astray in pre-Volstead days. A claim had to be filed promptly with the express company - the "open season" was nearing an end - and, the yardage of red tape incident to that small shipment was simply amazing. There was another authentic "case" in which a refund was made twice. So it happens often with big public service and other corporations.

One of the worst ills is the attempt to short-circuit the red tape. Many do it. They attempt short cuts in the established procedure, with the result that things get balled up generally and the tape badly tangled.

After all, do not the men who succeed handle this work as it comes to them - using a sense of proportion which is second only to a sense of humor - and thus have time to spare for reading such chatter as this in the Bulletin?

MATHER FIELD IDEAS

Responsibility and Accountability

By A. O. Waha, D-6

What failures in performance and errors in judgment should be considered sufficient cause for reprimand, demotion or discharge of different classes of officers?

In any set of rules or standards that may be devised along this line, it must be conceded at the start that there are bound to be extenuating circumstances in practically all cases of failures in performance. I am glad, however, this subject is up for discussion, since it will doubtless have a wholesome effect on all Forest officers to have them realize what they may expect in the way of disciplinary action by reason of failures in respect to the proper handling of a fire situation. It might be said that all Forest officers know what is expected of them - the entire field of fire protection has been pretty well covered by instructions, but we have probably all been more or less lax in taking appropriate action when the instructions have been ignored. What does the inspecting officer do when he finds that a Ranger has neglected, for example, to have his tools in first class shape for immediate use in case of fire? In the majority of cases the attention of the Ranger is called to his neglect and he is instructed to get his tools in shape. A memorandum may be written about it and filed in the Ranger's personnel folder. But does the Ranger understand that another failure or two of this kind on his part may result in his demotion?

MATHER FIELD IDEAS (Cont.)

In effect, I'm inclined to favor something in the nature of a demerit system. I think we have done enough coddling and it is time for most of us to change our natures in varying degrees and take appropriate action in all cases.

Often, laxity in proper follow-up in cases of inefficiency is due to the fact that it is practically hopeless to secure better material than that now employed. So the case is handled with gloves. Ranger John Doe may be a cracking good man in grazing management, stands high with Forest users, knows his district thoroughly and promptly handles fires, but it is found that he has neglected such things as clearing logs out of roads and trails, brushing telephone lines, cutting trees that impair the efficiency of lookouts, posting trail and fire signs, sharpening tools, etc. The Supervisor says, and he is doubtless correct, that he can scarcely hope to get a better man - it would take years for a new man to learn conditions as they are known by John Doe. It would not be my idea that we should endeavor to rid the Service of men like John Doe, but all John Does should be impressed with as clear-cut a statement as is possible as to what improvements are expected of them. The trouble now is largely caused by neglect on the part of superior officers in calling the attention of Ranger John Doe to cases of neglect of so-called little things because he is a good man. John Doe, regardless of the fact that instructions have been issued covering all phases of his work, will ordinarily make no attempts at improvement, unless his superior officers comment on conditions that are not right. So I say now that much of our weaknesses as found to-day are due to lack of observational powers and a closer follow-up. The object is not to rid the Service of men who are classed as average Forest officers, but to more clearly point out to such men the disciplinary action that may be expected by reason of failures of one kind or another.

To cover this topic adequately, one could write a manual which would probably contain more "ifs" than any manual on record. We must simply take it for granted that extenuating circumstances must naturally be considered in every instance and will be given due weight in considering what form of disciplinary action should be taken.

(This is the last of the Mather Field series.--Ed.).

Loco Eradication

By W. R. Chapline

During the season of 1917, Grazing Examiner J. W. Mann laid out 12 plots each 40' x 40' square, in an area on the Pike Forest heavily infested with loco. Three of the plots were grubbed, respectively, as follows in four series: Loco plants grubbed out completely; four inches under the surface of the ground; below the surface of the ground but above the crown of the plant. The first series of three plots was grubbed in June, the second series two weeks after the plants were in bloom, the third series 4 weeks after the plants were in bloom, and the fourth series in August.

The results of the readings taken on the plots in 1921 are as follows:

	Loco plants grubbed out completely in 1917. Per cent returned in 1921		Loco plants grubbed 4 in. below the surface of the ground in 1917: Per cent returned in 1921		Loco plants grubbed below the surface of the ground but above the crown of the plant in 1917. Per cent returned in 1921.	
	Plot	%	Plot	%	Plot	%
Grubbed in June	1	34	2	41	3	42
Grubbed 2 weeks after plants bloomed	4	38	5	45	6	45
Grubbed 4 weeks after plants bloomed	7	32	8	42	9	43
Grubbed late in August	10	33	11	40	12	47
Average		34		42		44

Loco Eradication (Cont.)

The conclusions drawn from the work on the plots are that there is no noticeable advantage in grubbing at any particular time during the season, as far as the individual plants to be eradicated are concerned, and that the percentage of loco plants on the ground three years after grubbing is so great, regardless of how grubbing is done, that grubbing once without regrubbing to eradicate plants germinating from seed is not warranted. The presence of so many plants on the areas which were completely grubbed evidently results from the germination of seed. Further investigation along this line will be made.

Be An "I Can" Giant

As on through Life's journey we go, day by day,
There are two whom we meet, at each turn of the way,
To help or to hinder - to bless or to ban,
And the names of these two are "I Can't" and "I Can!"

"I Can't" is a dwarf, a poor, pale puny imp,
His eyes are half blind and his walk is a limp,
He stumbles and falls, or lies writhing in fits,
And for those who would help him, plants snares and digs pits.

"I Can" is a giant, unbending he stands,
There is strength in his arms, and skill in his hands,
He asks for no favors, he wants but a share,
Where labor is honest and wages are fair.
--A.J.Berg, California.

Trout Waters of the National Forests

By A. H. Dinsmore, Bureau of Fisheries

Part III.

Of the fish named, the Dolly Varden is in least favor with sportsmen, and it is considered an arch enemy of the young salmon. The writer, on one occasion, saw 175 salmon fry taken from the stomach of a single Dolly Varden trout. On this account it is not propagated and its wanton destruction has sometimes been undertaken.

On the other hand, the anadromous steelhead trout is considered the finest game fish of the Pacific Coast States. It also constitutes a very important item in the commercial salmon fisheries. One case is known of the young of this fish maturing and reproducing in a small inland lake which before their introduction was without fish. Fish from below were barred from this lake by high falls, but from it they had ready access to tide water. If any passed out before maturity, enough remained to afford an abundance of "rainbow trout" fishing for local sportsmen. For, though produced originally from sea-run steelheads, they were here rainbow trout to all intents and purposes.

Whether some of the young migrate and others remain or whether all remain past one reproductive period and then migrate, the important point to note is that enough do stay to populate and repopulate the lake, and if at any time they or their progeny do descend to the sea, as they probably do, instead of possible harm, they directly foster the commercial fishery. The steelhead trout, then, it would seem, is the one outstanding fish for introduction to the streams of the Pacific Coast Forests.

The writer's observation is limited to the one lake referred to. Probably any Ranger in the Forests of the Pacific Coast has in his district, particularly if it be in the mountains, a lake or the upper section of some stream which has no fish. The steelhead trout is propagated in large numbers by both State and Federal hatcheries. The young fish should be readily available for the purpose and the results, if carefully noted, would be of interest to all concerned.

Last, but by no means least, to be noted are the means best adapted to the introduction of fish to fishless or depopulated waters. For, unless fishing be restricted to limited sections of the larger streams, natural replacement can by no means be expected to occur. The common means is, of course, the planting of fry or fingerlings. The planting of eyed eggs has as yet been resorted to only in an experimental way, but it is believed to offer decided advantages for stocking of waters which are not easy of access.

There undoubtedly exists among sportsmen an opinion that the planting of fry is a waste of effort. This, perhaps, is fostered by many public fish-culturists because it is more comfortable to follow lines of least resistance. It may be freely granted that in restocking waters where depletion has resulted in a great increase of the coarse fishes, at once the enemies of young trout and the food of adult trout, fish which have attained a length of 3 or 4 inches, if available in sufficient numbers, are desirable. The production of such fish in sufficient numbers to restock the miles on miles of ruined trout waters of the country is as probable as the restoration of the whaling industry of New Bedford by the artificial production of whales.

We are not now, however, considering the stocking of such waters directly, but rather the introduction of fish to the tributary streams, above the point where these coarse enemy fishes occur. If we can accomplish this task, and close them to the fishermen, nature, working as it was ordained to work, will in time accomplish a task which seems to the writer hopeless by other means.

And for this purpose I am of the firm opinion that one dollar invested in fry is worth ten dollars invested in fingerlings. The sales price at commercial fish farms indicate, and I am sure any experienced fishculturist will agree, that the relative cost of 3 inch trout as compared with unfed fry is at least in the ratio of 10 to 1. But this is only the beginning! Without considering the element of safety, which is decidedly in favor of the fry, the cost of transportation of the fingerlings to railroad destination, as compared with fry, will approach the ratio of 20 to 1. And when it comes to back packing the fish to the distant mountain streams, the ratio may be still further increased.

In my opinion, if possible, fry for the purpose under consideration should be unfed but practically ready to begin feeding. Unfortunately, it is not always practicable to get fry out at this time, and they must be fed. It is inconceivable to me, however, that anything is gained by stuffing these small fish with packing house by-products for a few weeks, taking the inevitable losses which will occur, and then planting them, to undergo a complete change in diet, before they have attained a size which gives any advantage over possible enemies.

From the public hatcheries, however, the Forest Service can have little choice in this matter and circumstances often prevent shipping the fish at the most advantageous time. In rare instances the hatching of a sufficient number of fish for local needs may be possible at some of the ranger stations. The production of trout fry under such conditions is the most efficient application of fishculture possible.

Given a suitable water supply, it takes about as high an order of intelligence and rather less time from day to day to hatch a hundred thousand eyed trout eggs and carry the fish through the sac stage as is required to make a dozen hens produce eggs. And the equipment required for the fish can sometimes be improvised at less expense than is required to equip for the hens.

The writer successfully hatched the first trout eggs he ever saw in the domestic water supply in his cellar, with equipment which cost something like $3.00. And these eggs were taken from trout caught in open season with hook and line and matured in a print washing tank in a photograph studio. He also fixed up a similar "hatchery" for a banker friend which for years was used to hatch a supply of trout each season for a private preserve. Should such a plan seem feasible at any of your ranger stations, suggestions suited to the given location will be gladly prepared.

Whatever the source of the fish, their handling in planting will be the same. They should never be left unattended, and when not in motion the water must be kept areated by dipping or other means. Much closer attention is required in warm than in cool weather because the colder the water, that more rapidly it absorbs oxygen. Care, however, must be exercised in changing the temperature, if ice is used, and it should be brought to approximately that of the stream in which the fish are to be placed before they are liberated.

The fish should be scattered over as wide a territory as practicable, placing a few fish in each small, spring fed tributary stream. The fish should not, however, be placed directly in boiling springs. Water coming directly from the ground has little, if any, food in it, and it often contains noxious gases absolutely fatal to fish.

Trout Waters of the National Forests (Cont.)

The planting of eyed trout eggs in the small, spring fed streams having gravelly beds, referred to above, seems likely to offer the very best possible means for stocking isolated streams. A small case of less weight than that of a can containing 5,000 fry can be packed to hold from 50,000 to 100,000 eggs, and all the time necessary can be taken in scattering them widely through the feeding streams of a large watershed.

It is understood that this plan has been operated with success by some fishculturists, but I am not familiar with their methods. We have recently completed an experiment at York Pond in the White Mountain Forest. While not completely successful, because of the close space in which the eggs were confined in order to retain the fry, the probability of success in open creeks was indicated.

Our eggs, 4,000 in number, were buried in gravel in a bottomless box, the water passing up through the gravel and overflowing the box. Many of the eggs hatched in a perfectly normal manner, but there was considerable loss, evidently from ununiform circulation of water within the boxed gravel. In practice, I would make much such ricks as the fish prepare for spawning purposes. I would then scatter the eggs thinly and rake the gravel in over them. This will be given a complete trial next season, I am confident, with perfect success.

In closing, let me say that I am intensely interested in the upkeep of fish life throughout the waters of the National Forests. I shall be interested at any time to hear directly from any of your Supervisors or Rangers who may have special problems on their hands.

The End.

Field Record of Forest Officers

The succeeding several issues of the Bulletin will contain tabulations of different kinds showing various data of Service interest which was collected during the recent allotment conferences in the Districts.--E.W.K.

Field Days, District Office
Calendar Year 1921

Officers	Districts							
	1	2	3	4	5	6	7	8
Dist. Forester	143	131	129	146	192	90	103	60^x
Asst. D.F. Operation	132	120	105	171	146	127	87	66^x
Fire Specialist	152	220	---	---	216	152	---	--
Imp. Specialist	78	---	---	---	186	---	---	--
Telep. Engr.	185	141	---	---	217	210	---	--
Law Enf. Spec.	168	---	---	---	148	120	---	--
Asst. D.F. Management	124	108	115	103	80#	86	92	146
Asst. in Management	---	103	88	80	--	64	--	---
Log. Engrs.	209	134	85	--	155	98	101	---
	222					140		
Check Scaler	201	---	--	--	210	---	---	---
Asst. D.F. Grazing	126	95	134	157	96$^{@}$	107	60^x	
Asst. in Grazing	131	111	93	190	--	58	--	---
Chief Engr.	74	88	84	108	115	71	30	---
Asst. Engineer	123	180	---	---	---	29	--	---
Map & Surv. Chief	101	---	---	160	175	51	--	---

x - 6 mo. period.
@ - Part year assignment.
# - Laid up 6 mo. with broken leg.

WASHINGTON NOTES

Forest Inspector I. F. Eldredge of Forest Management, West, left on Monday, May 8, for a field inspection trip in Districts 3 and 5. Forest officers who read Mr. Eldredge's heart-rending threnody, "Homesick for the West," in the June 6, 1921, Service Bulletin will rejoice to learn that he can now once more "romp as a colt among the old fields of sweet memories."

Col. Greeley addressed the Southern Appalachian Logging Congress at Cincinnati, Ohio, on May 10. He expects to leave Washington shortly for a field trip in the West. While in D-1 he will attend the convention of the National Editorial Association at Missoula, July 19-22, and deliver an address.

"Uncle Sam's Hired Men" (and Women) in Washington started work to-day at 8 a.m. instead of nine, and will quit at 3.30 p.m. This change was ordered by the President and will probably remain in effect until fall.

Ward Shepard of Research is up at the Madison Lab. getting acquainted.

Hard-Headed? The Police Commissioner of Washington reports that his patrolmen break from 4 to 5 "billies" on every "lively night." He has asked Research to aid him in determining whether it is hard-headiness or poor quality of wood that is responsible for this condition. Impact tests, by machinery, are expected to solve the problem.

Assistant Chief Engineer F. E. Bonner has just returned from visiting the Western District offices and a field inspection trip in District 2.

FOREST PRODUCTS LABORATORY

Bouquets for Service Work in Turpentine Field: "It is a striking fact that the first great improvement in the industry resulted through the introduction of the cup and gutter system in 1901 through the energy of Dr. Herty, and this step to-day remains the high-water mark of advancement. Another fine piece of work was performed by Miss Eloise Gerry of the Forest Service. A microscopical study of tapped trees showed clearly the nature of resin flow, and, aside from the investigations of Tschirch, furnished the first really scientific information on which a rational method of tapping could be based." --From the Journal of Industrial and Engineering Chemistry.

Barnes Likes Sawdust Stock Feed: Will C. Barnes of Grazing paid his first visit to the Laboratory, spending a day here recently going over the whole operation. The sawdust stock food proposition naturally proved especially interesting to him. So taken was he with the idea of the edibility of this by-product of wood that he left the next day with a quart jar of our choicest variety tucked in his suit case, leaving dark hints behind that he was going to prove its worth as food by slipping a portion into each man's salad at a lumbermen's banquet he was going to attend at Oshkosh. We haven't heard whether the lumbermen bit or not.

"They bit all right. At each man's plate was placed a small paper receptacle such as the hostess uses on her dinner table to hold nuts. These were filled with the sawdust stock feed, which didn't look unlike the grape nuts from Battle Creek.

Tom Swan and I watched for results. The lumbermen, used to all sorts of strange foods, eyed these little boxes with some interest, but it was not until we each took up and ate a small pinch of the material designed for cows that they decided to tackle it.

They chewed manfully on it for some time until finally one "hard boiled" sawmill man couldn't contain himself longer. "What in Sam Hill is this stuff in these little boxes?" he demanded. Then the truth came out and the joke was thoroughly enjoyed by the whole crowd.

Each man left the house carrying with him samples of the stuff with which to repeat the joke on others. They all agreed that while it might do for cows there were other articles of diet with far more appeal than this latest product of the Madison Laboratory." -- W.C.B.

DISTRICT 1 - NORTHERN DISTRICT

Kiln Drying Course Completed: Beginning on April 10, a two weeks course of instruction in the theory and practice of drying lumber was conducted at the plant of the Winton Lumber Company at Gibbs, Idaho. The instruction was carried on by three experts from the Forest Products Laboratory, Madison, Wisconsin; Arthur Koehler, Albert Hermann and A. C. Knauss, who had previously given courses at Eureka and Susanville, California, and Everett, Washington in Districts 5 and 6. Preliminary arrangements and the enrollment of applicants were handled by S. V. Fullaway, Jr., of this office. Fourteen students were enrolled. Of these thirteen were sent by lumber companies, and one by the University of Idaho.

Demonstration runs were made on Idaho white pine, western yellow pine, larch and Douglas fir to illustrate kiln drying procedure. Each student appeared enthusiastic and well satisfied with the course.--C.N.W.

Forty Articles on Auto Trips Out of Helena: "Motor Jaunts from Helena," will be the title of a series of articles to appear in the Record-Herald daily, beginning early next week.

Approximately 40 trips, some of them an hour's drive and some long enough to occupy a day, or in a few cases two days, have been outlined. Each day one of these trips will be summarized. Concise information, as practical as possible, and calculated to give the excursionist essential knowledge of the road to take, the distance, grades, scenic and historic attractions, will be given. Some of the popular fishing trips will be treated.

Datum for these articles is being supplied by A. H. Abbott, supervisor of the Helena National Forest, and by his office assistants and the rangers in the field. The rangers have sent in the information as to trips in their districts, giving much valuable first-hand data which Mr. Abbott believes will prove desirable to motorists.

Also, the county commissioners will assist with road information.

With each article will be an admonition, prepared by the Forest Service, to protect the public playground against fire, to guard it against the destruction or marring of the scenic beauty and to prevent pollution of the streams.--Record-Herald, Helena.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Motion Pictures of Planting: The motion picture men of the Department of Agriculture arrived at Halsay, Nebraska, on April 20 for the purpose of taking pictures of the nursery and planting operations. They secured pictures of every operation and a good film should result. About 90 men are being employed by the Forest Service, half of them at the nursery and the remainder at the planting camp which is located 6 miles from the nursery.

D-2 Stepping Into the Uniform: The major portions of the uniforms for the Forest officers in District 2 were purchased from a Denver dealer through the District Cooperative Buying Association. The orders to date are around the $1,000 mark and business seems to be just getting in full swing.

The Usual Snowstorm: On April 16 Colorado was visited by the usual snowstorm. In the plains district east of Denver it took the form of one of the most severe spring blizzards in the history of the State. Reports are received that a great deal of livestock, such as calves, cattle, pigs, chickens, etc., perished either from exposure or smothering from being buried. The storm will have its compensations, however, because of the great benefit that should result to the agricultural interests.

Too Much Personal Touch: One of our Supervisors, in a sincere attempt, to get his 1921 grazing fees cleaned up, adopted the personal conference plan and his efforts met, in one instance, with rather disastrous results. This particular permittee has always had the reputation of being hard to manage, and two previous Supervisors refused to do business with him personally. But the value of personal touch has been so fully demonstrated that the present Supervisor ventured to try the plan on this individual and not follow the lead of his predecessors. After some discussion, the fellow struck the Supervisor without warning, following him to his car and beating him in a violent manner. The brother of the permittee came to the Supervisor's aid and he succeeded in getting off the premises. The incident emphasizes the need for some Federal law which will protect Forest officers in the discharge of their duties.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Forest "Movie" in a Hay Barn: Rural people were not undone by untoward circumstances. A showing of Forest Service motion pictures had been arranged as a part of a farm bureau meeting to be held at a schoolhouse near Albuquerque, but the man with the key failed to appear. A trip to his house disclosed that the "key man" had gone to town and taken the key with him. This progressive group of country folk were not to be downed by a proposition like that, however, so upon invitation of one of their number, they repaired to his large, electric lighted, hay barn, where the pictures "Reforestation on National Forests," "War Work of the Forest Products Laboratory," and "Meadows and Mountains" were shown. With the people sitting comfortably in the hay, there was not the formality of a set program. Explanations of the work pictured were asked for at almost every step and it is counted one of the very best showings of the season.

Mexican Fires: Outlook for fire control along Mexican boundary is brighter. By agreement between our Government and the Mexican authorities, passports are no longer required for persons who cross the international line. This removes one big obstacle that has stood in the way of forest officers taking action before a fire gets onto United States territory. No formal permission has been granted by the Governor of Sonora for our men to fight fires south of the border, but it is understood that objection will not likely be raised because Mexico has no organization or machinery for protection against fires and all that may be done in this direction is clear gain.

Salting Away from Water: Good results of salting away from water are shown by the utilization of a very rough, rocky area on the Gila Forest. Water rises in a narrow sandy canyon, flows for a hundred yards and sinks. Just above where it rises is a grassy flat of a quarter of an acre, covered with oak, junipers and cherry trees. The ridges on each side rise at such a sharp angle and are so rocky that no self-respecting cow without goat blood in her veins could be expected, unless by some special inducement, to graze there. So salt is placed along the tops of these ridges from one-half to three-fourths of a mile from water. A bunch of cattle comes down, drinks, shades up, drinks again and when the exodus starts, instead of trailing up the canyon a couple of miles and then running out on the lower ridges and flats at the head of the canyon, the cattle spread out fanwise over these steep slopes and spend half a day grazing their way to the top. The little flat, while of course overgrazed, is not the dust bed that it would be if a salt ground were located there, and the ridges are completely utilized.

Ranger Bill Says:

Too many "pleases" has spoiled many a good Ranger.

What you need is more business mixed with your forestry, said Lumberman Slashem after lookin' over my last markin'.

How 'bout lettin' tourists that leave camp fires burnin' make out one of them new fire report forms 'stead of doin' time in jail?

DISTRICT 4 - INTERMOUNTAIN DISTRICT

San Francisco Office to Handle Roads: Word has been received from the Bureau of Public Roads that the Nevada Forest roads would be handled henceforth from the San Francisco office rather than from the Ogden office as formerly.

Victor Farmers Want Road Built: A petition signed by the residents of Victor, Idaho, has been received by District Engineer Martin from C. N. Hatch, a merchant at Victor, petitioning the Forest Service to construct the roadway through the Teton National Forest and between the towns of Victor and Irwin.

The roadway would be 30 miles in length and would connect the Teton and Swan valleys and would provide means of transportation for the farm products in the Swan Valley to the railroad station at Victor. It will also form a link in the highway system to the Yellowstone National Park.

Victor Farmers Want Road Built (Cont.) (District 4)

It is estimated that there would be hauled over the roadway each year approximately 500,000 bushels of grain and between 12 and 15 carloads of hogs, and that in the handling of those products there would be saved to the farmers of that section approximately $6,000 per year in hauling expenses, by the construction of the road.

The estimated cost of the project has been placed at $75,000.

Radio Club Organized in Ogden: Considerable interest is being aroused in Ogden over the possibilities of wireless communication. An Ogden radio club has been organized, and, in cooperation with the city, a broad-casting station will be installed in the city hall. This set will have a sending radius of 500 to 1,000 miles, and it is expected that all kinds of communication will be broadcasted throughout Utah, Nevada, and parts of Wyoming and Idaho.

Possibly this will enable us to cut down on a number of circular letters when amateurs in all Supervisors' towns equip themselves with receiving sets. Mr. Adams would surely feel at home in Ogden now.

Gery Goes to Washington: In response to a wire from the Forester, Mr. Gery left Saturday afternoon for Washington in connection with the Idaho Land Exchange. Mr. I. H. Nash, Idaho State Land Commissioner, is in Washington to attend the Weeks Law conference and it was desired that Gery attend also.

DISTRICT 5 - CALIFORNIA DISTRICT

A "Come Along" Boss: Ranger Alva Tracy (Trinity) acquires a new title. A member of the short-term force in the Yola Bola District being questioned as to the kind of a boss he had replied: "Oh, he's all right. He's one of these 'Come-along' bossses. When there's a job to be done, he doesn't say 'Go along, boys, and do it.' He says instead, 'Come along, boys, and we'll do it.'"

Personnel Study: A study of the D-5 personnel furnishes some interesting information. For instance, the average District Ranger is a man 37 years old, who has spent $9\frac{1}{4}$ years in the Service and who had approximately 9 years schooling, 8 in grammer school and one in high school. Only 10 of the nontechnical men have taken Ranger courses given by Forest schools.

The periods of service for a total of 199 Forest officers in the District, all grades included, are as follows: 47 from 1 to 3 years; 20, 4 to 5; 26, 6 to 10; 69, 11 to 15, and 37 over 16 years.

Resignations, using a post-war two-year period as a basis, has averaged for a year as follows: 1 Assistant District Forester, 4 specialists, 2 timber sale men, 1 to 2 Supervisors, 1 to 2 Deputy Supervisors, and from 19 to 20 Rangers. Resignations from now on will undoubtedly be less than this.

There are in the District 15 men who were born in foreign countries, 11 of them having been British subjects. France, Norway, Sweden and Russia have each one representative. Of the native-born California has 48%, or 89. Illinois ranks second among the other States with a representation of 15.--P.P.P.

Automobile Guide: The Government Printing Office is now turning out 100,000 copies of the Guide to automobile campers in California. While a goodly supply will be sent each Forest, the main distribution will be through the automobile associations and the 200 or more Chambers of Commerce and municipalities that are listed in the Guide as cooperators in the issuance of camp fire permits. Through the medium of this Guide, camp fire permits and windshield stickers, we hope to spread the gospel of forest fire prevention to every corner of the District.

Exhibit Well Received: It is estimated that the Forest Service exhibit, which was at the Don Lee Company of San Francisco during "Call of the Open Road Week," was seen by over 20,000 people. We received many favorable comments, both from the press and from those who viewed it.

Something Different: On the Stanislaus Forest a party has made application to purchase moss from timber sales, with the idea of selling it to florists, decorators, etc. The Supervisor figures that about $2.00 per ton would be a reasonable price and has written for suggestions. Some of the moss has been brought to San Francisco and taken to a dyer. Experiments have been made with red and blue and the results have been fairly satisfactory. More experiments will be conducted and if it looks like a worth while proposition definite plans will be perfected.--Stanislaus.

DISTRICT 6 - NORTH PACIFIC DISTRICT

The Auto Club of Western Washington has offered to put up on their sign posts three to four hundred Forest Service fire prevention signs. These signs will be 7½" square, white with stencil design, and will carry the outline of the Forest Service shield and pine tree with the words "Prevent Forest Fires - It Pays." The signs will be placed on the posts immediately below the Auto Club's standard highway marker. Most of the fire prevention signs will be used on roads outside the National Forests of the District and should be very effective in calling public attention to the need of fire prevention.

Prizes Won: In a recent prize photographic contest held by the Bellingham Herald, Supervisor Park of the Washington Forest won first prize for the best picture taken in the Cascades, other than in the Mt. Baker region. He also receives third prize for the best picture of Mt. Baker taken by an amateur.

Using His Head: After I had received two or three applications for timber for fuel and posts, I decided to try to clean up all of my timber sale work. A short ad. was placed in the local paper stating that I would be in a certain locality to mark timber. At the appointed place and time there were sixteen different parties came and wanted timber for different purposes. On this one trip I made out twelve S-22 sales for a total of 43,850 B. F. and issued nine free use permits for 32,500 B. F., making a total of 76,350 B. F. This made a saving of from ten to fifteen days over the old method of marking for each individual as he would apply.--Harper, of the Wallowa.

"The People's Playground":During the summer season of 1921 there were 285,000 visitors on the Wenatchee Forest; 45,000 were campers, 19,700 were hunters and fishermen, 212,000 auto passengers, 6,100 other travelers, 2,100 pedestrians. Only 62 fires were left burning by the 285,000 people, 1 fire to each 4,600. Our propaganda must be having some effect.

DISTRICT 7 - EASTERN DISTRICT

A Mountain Crest Trail extending from the White Mountains in New Hampshire to the Smoky Range in Tennessee is being actively promoted by the Institute of American Architects with the backing of such organizations as the American Geographic Society, Appalachian Mountain Club, New England Trail Conference, and others.

The trail will be about 1,650 miles in length. The primary purpose of the plan is to stimulate public interest in getting out into the woods and mountains afoot, and to develop more widespread personal touch with the meaning of forest devastation and forest protection. From one-fourth to one-third of the trail system has already been built, and a large share of it traverses National Forest lands. Supervisor J. H. Fahrenbach, of the Natural Bridge, states that all that portion of the project within the boundaries of his unit is completed.

R. M. Evans, most recently of Baker, Oregon, has arrived in Washington and taken up his duties as Assistant District Forester, in charge of Forest Management, District 7. After graduating from Yale Forest School, Mr. Evans entered the Service in 1910, his first assignment being to the Oregon National Forest, District 6. He went to the Whitman as Deputy Supervisor in July, 1913; was made Supervisor in 1916, and has been on the Whitman continuously ever since.

USES, ABUSES, AND LIMITS OF STANDARDS IN FIRE PROTECTION

Fred Morrell
District Forester

With Comments by the Forester

A somewhat general discussion of standards of procedure versus individual methods seems desirable as an approach to the topic under discussion. Progress in industry, science, education, and other lines, has largely been made through the application of standards. Our social structure has as its base standardized ways of doing things - standardized requirements as to deportment, social intercourse, etc. Our educational system is highly standardized. Generally speaking, each child is taught the same things and by the same methods. A man teaching one pupil might follow his individual methods. But if he builds up a large educational institution where he employs other teachers and has many students, he would require that standardized courses of instruction be offered and that the teachers employed by him follow standard practice in offering them. All big organizations standardize their work. The employee is required to follow standard methods rather than allowed to follow his own judgment. The small merchant who has no employees may proceed in accordance with his individual judgment and ideas, although he will usually follow standardized methods. As his business grows, he employs others and imposes on them the standards which he considers most suitable for the conduct of his business. Ministers of a great denomination are required to teach certain standard doctrines and to use standard methods in presenting them to their congregations. Science may be defined as systematized knowledge, and procedure standardized approaches a science because it is the operation of affairs in accordance with regularly systematized methods.

It would seem, therefore, that wherever progress in a big undertaking has been made, standardization will be found as one of the biggest fundamental principles on which the thing undertaken has been handled. It seems to be the recognized way of accomplishing things of magnitude. The Forest Service has been no exception to organization which progressed by standardization. It requires but a moment's thought to conclude that most of our progress along lines of National Forest administration has been largely due to standardization. Years ago we estimated the value of timber largely in accordance with the individual ideas of the employee sent out to make the appraisal. We marked timber for cutting largely as the individual with the marking ax considered best. We made our own allowance for defects in logs when scaling. We had much leeway in questions of brush disposal, utilization, etc. Now we have a standard outline for appraisal which points out just how each factor of cost is to be handled. We have a standard way of making the map and of recording other necessary data. When an individual goes out to mark timber, he is provided with a fixed set of marking rules which apply to the particular type and conditions where the sale is located, and his job is primarily to interpret those marking rules and apply them in the marking. We have definite rules to follow in determining how much should be allowed for defect in logs; how brush and other debris should be disposed of. Our planting work is conducted in the same way. Determination of most of the problems arising in grazing administration is done by interpreting standardized rules and procedure which are in effect. We are continually working toward a clearer definition of those standards, and a tighter check to see that they are being complied with.

It is a noteworthy thing that those who have been most responsible for standardizing these things are often the most severe critics of a proposal to standardize along other lines. For example, a man going out with a party of four or five others to work out some refinmment of standards alread quite explicit applying to the marking of timber in a certain type, viewed with great alarm the tendency to standardize supervision methods, and some protection methods. I think it a fair statement that those who have questioned seriously the advisability of standardizing along organization and protection lines have frequently at the same time expressed themselves as heartily in favor of most, if not all, of the standardization that has already been done. If this is true, it must be either that they are inconsistent in not having thought the whole matter out, or that there are really substantial reasons why organization and protection can not be standardized as can be most other lines of activity in the Forest Service, and as have been most activities in the realm of industry, education, and sociology.

Let us put down as plainly as we know how the advantages and disadvantages of standard ways of doing things as against doing them in accordance with each worker's personal preferences. Does not standardization mean, first, bringing together the best thought, the best experience, the best judgment, sifting, analyzing and correlating it, and putting it into practice? Second, the restricting of personal latitude and the limiting of personal choice in trying out one's own schemes; and third, a certain danger through defeating personal initiative and lack of development of certain exceptional workers who have the industry and ability to improve on past experience unless definite provision is made for allowing those who have new ideas of probable merit to test them out, and the organization be willing to discard old methods and accept new ones after their value has been proven. Fourth, is it not true that a new thing in order to be tried out must be presented to the whole organization in a forceful and persistent manner, or it will die a-borning?

If this is a fair statement of the advantages and disadvantages, we may proceed to a consideration of whether the former outweigh the latter. Let us take up the first argument that standards curtail personal initiative, hold up personal development, and tend to stagnate the organization. Can we find anywhere in industry or in science a precedent for refusing to standardize for this reason? If a stockman had a thousand cattle to be fattened for the market, would he allow a man engaged to feed them to follow his own way if he proposed a method different from the accepted way of feeding? In the light of our present knowledge regarding the planting of trees, would we allow a planting foreman to depart from established procedure on a wholesale scale because to do so would defeat his personal ambition to try out a method of his own which had not stood the test of experience? Would not the stockman consent to test out the new method, if it seemed to have merit, on a few head? And would we not try out the foreman's method on a relatively few trees? Would school authorities consent to a superintendent of instruction trying out a method of education throughout the whole school system which was different from the standardized ways in order that he might develop through trying out the merits of some new system which he had devised? Is not the way to take advantage of new ideas and individual initiative to be found in a recognized and comprehensive investigative program which will test the merits of new things in organization, and new ways in fire protection? Is not that just what we do in other lines of National Forest activity? And is not the measure of the size of the program that should be undertaken to be found in the testing of all seemingly worth while ideas advanced by the whole organization, so that if each man is given an opportunity to try out, or see tried out, all of his odeas which on their face have merit, can he not develop nearly as well, and the organization advance toward new methods just as fast as though standardization were not done, and at the same time avoid the chaotic conditions which result from allowing too many men to try out things which have no merit?

In other lines of National Forest activity - timber management, planting, range management, etc. - we have recognized investigative programs. We go at the trying out of new methods in a systematic and organized way. Long ago, we discontinued the old practice of allowing every one to take such time as he could find to test out different theories he had. In detail organization, which is the major thing in fire protection, no such a program has ever been seriously attempted. We have gone along under the assumption either that we knew all that it was necessary to know about organization, or that each man would find out new things for himself, or that, having standardized other things, it is necessary to allow each man to have a rather free hand in organization in order that he may develop a personal ability.

I think the Forest Service is perhaps justly open to the charge that we have standardized those things which have been more standardized in the outside world, and have not made as much progress in things where we had to blaze our own trail. Perhaps, too, the opposition to standardization in some of these organization and protection matters is simply illustrative of the opposition that usually comes toward new things in the world in general. For example, the Medes and Persians developed certain laws which have been continued down through the centuries, changed somewhat in places, emphasized sometimes more, sometimes less, but most of the laws touching on the standardization of public morals can be traced back to them. If a State were conceivably without a law which would punish an ordinary thief, such a law would be immediately passed with almost unanimous consent; but a State being without a law making it a crime to rob through dishonest promotion, it is found extremely difficult to pass one. Isn't the reason, possibly, because the one thing has been accepted as a proper restriction of personal liberty and the other not? And do we not, perhaps, have the same physchological basis for the opposition to some of the things that are now under course of standardization?

I talked with a man recently who is seriously concerned over the movement to require certain standards in supervision from Forest Supervisors. He believes, for example, that a Supervisor should be held for results, and allowed to carry out his supervision in whatever way he believes will best get them. He agrees that in his judgment no Supervisor has made a success who has not spent a considerable proportion of his time in the field, but objects to making a requirement that each Supervisor shall spend a proportion of his time in the field because that takes away some of the Supervisor's latitude in action. He insists that it is better to let the man who does not go in the field stay in the office until he has demonstrated after two or three years the same old thing that that sort of supervision does not get results. Argument of this kind would be better, if consistent. But this same man would not agree to allowing a Supervisor to mark lodgepole pine in such a way as to leave a stand that according to the great bulk of experience can be expected to blow down in order that the Supervisor might exercise his initiative in Forest practice.

The answer to all this is that we must recognize organization and fire protection as sciences, and we must work toward systematized knowledge in both. We must insist that methods which have proven efficacious be practiced religiously until others proven to be better are found. And in order that we may find better ones, we must have a recognized comprehensive investigative program. Men most responsible for protection and organization methods must lead the way, showing the organization as a whole that these subjects are really sciences. They must demonstrate that they are experts in them. As long as it is a question of judgment as to whether certain results will follow certain things in silvicultural practice, one man may claim as much right to say what will happen as another; but when our research organization has taken hold of a subject and proven certain things by indisputable demonstration, the research man becomes the authority on the subject and no one either makes the effort or claims the right to dispute his conclusion except by going farther in the investigations than did the first man. Are not our protection and organization work seriously suffering because we have not approached them from the standpoint of investigation, but have been attempting to arrive at the best ways of doing things, using personal judgment as the basis on which to build? Organization men are not in position to dispute with silviculturists as to the proper amount of thinning to get the maximum protection in certain stands because the silviculturists can show definite figures which prove, in part at least, their position. But silviculturists have a right at any time to open debate with organization men as to the best type of organization because a systematic way of recording the results of different methods in organization has not been provided and carried out, and sufficient facts approaching mathematical accuracy can not be cited in support of any system.

In many things there are data enough available. Many things can be proven by a compilation of the material that can be found in our files. A goo many things have already been reasonably well proven, and it remains only to assert them and to array behind the assertion the facts which are at hand.

Coming to the question of abuses in the standardization, three dangers occur to me:

First, we should be careful not to standardize a thing at the present time on which there is not sufficient data to base a standard method; that is, where there are a number of possible ways, none of which can be said to be the best. In such case, our standard for the present should consist only in insisting that it be done in one of the several ways, and we should then carefully investigate in an effort to find the best.

The second possible abuse is that standards be set which are not based a recognition of the particular conditions to which they are made to apply. Obviously, many things must be done differently in northern Idaho than in New Mexico or Colorado, and before any standard is determined upon a careful study of the conditions where it is to apply should be made.

The third possible abuse is that we fall into a rut and insist on things being done to-day as they were yesterday, refusing to recognize the better ways which have been brought out through investigation. This is always the difficulty in connection with research work; and it is not difficult to get from research men in the Forest Service now complaints that the administrative organization is not putting into effect the new methods which research has found to be better than the old.

The last part of the topic assigned is the question of limits in standardization. So far as I have been able to think it out, we do not need to set any limits on the things that shall be standardized. It does not seem to me that there are any steps in the protection job that will not in time be standardized. We have already standardized a great deal as to forms, equipment, reports, practice on lookouts, certain things in organization; in fact, I think standardization is already more than 50 per cent complete. And we have been at it ever since we started in on the job of fire protection. We are not now proposing to depart from past practice, but are proposing to hurry along the job, and have made a statement of our intentions. Let us compare two or three of the things which are less standardized in protection with some that are standardized in other lines. A timber survey crew, for example, is organized in a standard manner. It consists of a certain unit of organization, working either as a single unit, or in multiples. The duties of each man in the organization are specifically prescribed - just how he shall go about his work, the sort of notes he is to keep, the intensity with which the work is to be done - are predetermined for him. Contrast that with an organization sent out to fight a fire in a given type of country and under a given set of topographic, ground cover, and climatic conditions. There are plenty who hold that in such a case it is impossible to do any more than to leave it to the judgment of the man who is in charge whether he be an experienced fire fighter, and a man who understands forest economics and organization procedure or not. This, in practice, is about what we have been doing. Have we not come to the time when we can marshall a few proven facts as to the number of men needed, speed with which fire lines should be constructed, the kind of men that should be hired, the methods of organizing them and the ways in which a fire trench should be constructed, and place these in the hands of the man who is going to fight the fire for his instruction and guidance. It is not contended that they can be as specific now - perhaps never as specific as those existing for a timber survey crew; but it is contended that it is just as logical to insist on certain standard methods in some of these things as it is to insist on some of the standardization which is in effect in the other lines of work.

Compare for a moment the existing standards for the construction of a telephone line with those for the construction of a fire line. No one would for a moment contend that the standard instructions for building telephone lines should be discarded in order that each man placed in charge of a project might be free to do the job in the best way that he could find, even though telephone line foremen are carefully selected and there is always time to look into their qualifications. Constructing a fire line is, perhaps, not as technical a job, but there are certain fundamental principals which should be followed which can be pointed out by any man here present; and these fundamental principles, or some of them, are being continually violated because they have not been set up as standard requirements.

Prevention work is, possibly, the least standardized of any line of fire protection. As I see it, we have not fully analyzed our fire prevention job. We have not set up certain objectives in fire prevention work in a definite enough fashion. One man has devised a poster; another a window display; another movie slides; another a cancellation stamp, etc., - all good things - all having a desirable effect in fire prevention work. But it has been at best a shotgun attack. We have largely pointed the guns over in the direction of the enemy and let fire; and we have to a pretty large extent assumed that because we used so much powder and made such a lot of noise we must necessarily have killed a great many of the enemy. The reports of casualties may be underestimated, or they may be largely exaggerated. We have been largely opportunists, contenting ourselves too much with pointing out all the possible ways by which the problem may be attacked, and all the possible people that may be reached, but often failing to single out the particular class of offender and going after him with a style of attack developed to fit his particular case. Ways of meeting certain evils have been suggested and have sometimes proven effective; but they have not been set down in a comprehsneive way and insisted upon as future practice. We find one man contending that he knows best what should be done in fire prevention because he has experienced certain things, and another contending just the opposite. In my judgment, this conference should give careful consideration to standardizing the fire prevention end of the work. We, of course, know that there is a possible solution of more than 50 per cent of our trouble in the prevention end of protection. As an organization, we have not attacked that end of the job with the comparative energy and system as we have some of the others. I can see no reason why it does not lend itself to standardization just as readily as does any other kind of education or advertising.

To sum up:

1. Standardization should be recognized as a necessary basis for progress in effective fire protection.

2. It should be the aim to standardize each separate step as far as possible.

3. Standards should be based on clearly defined statements of conditions, and a given standard made to apply to a given condition only.

4. It should be recognized that there will be some loss in enthusiasm and the development of a few exceptional men unless,

5. Provision be made to allow for trial of departures from standards that appear to have real merit. If this is done to the right extent, the loss under 4 should not be considerable.

6. Standardization is a matter of degree. Some things can be standardized to mathematical accuracy; others only in general terms. This principle should be recognized and each standard defined only as literally as warranted by the proven data.

7. A definite program of investigation as a means of progress through better methods should be undertaken and carried forward with as much faithfulness as is used in the enforcement of standards.

8. The organization must be careful not to fall into a rut by assuming that certain methods are necessarily the best and refusing to accept others which investigation indicates are better. This seems to me especially important because I believe we are already traveling in some organization and protection trails designated not by proven facts, but consisting rather of ways through the woods, originally selected by the pioneers in Forest Service organization.

Comments

Mr. Morrell's paper has not been reproduced in the Bulletin because it could not be briefed as required by the space limitations of the Bulletin. It is now sent to all Forest officers as an exposition of standards which will repay careful reading.

The point of view, policy and programs set up by Mr. Morrell should be recognized as having the approval and support of the Forest Service.

I should like to see an administrative and protective investigative program become a recognized feature of Service work. I believe this will be the best insurance against getting into ruts and I am confident it will afford the needed encouragement to individual initiative and to the growth of new ideas.

I do not believe any formal provision for such a program is necessary. We already have regular ways of taking up those investigations that can best be handled by the Branch of Research. In addition, District Foresters should encourage the challenging of any standard by anyone who can make a reasonable showing of the need for an investigation and should arrange for the needed study or experimental work. When the Forester's approval is needed it will be given if at all possible.

Every effort should be made to arouse general interest in any such studies or tests. That will be a good way to establish permanently the tradition of cheerful acceptance of standard practice, ceaseless efforts to discover and adopt improved standards, and a general willingness to be shown where we are wrong.

W.B.G.

Service Bulletin

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HOW TO TRAIN TECHNICAL WRITERS

(After-dinner speech by John J. Cochrane, Director of Publicity,
U. S. Bureau of Mines)

Most forest officers write something sometime (besides diaries and circular letters), some of them claim to be technical, and some of the stuff they turn out may pass for technical writing. And so the following advice may be particularly timely. It is from a dinner speech by John J. Cochrane, Director of Publicity for the U. S. Bureau of Mines. The toast to which this was the response read: "If you had the power to develop a writer of technical matter, what course would you adopt?"

"First of all, I would catch him young and feed him on alphabetical crackers to insure that he became a man of letters. Then I would give him a careful diet of raw bull to strengthen his nerve - the one most essential thing to technical writing.

"I would teach him that the other man in the same line of work is always wrong; can't possibly ever be right. (You could prove that through the fact that he indulges in technical writing.) I would attempt to teach him that clearness is fatal to any technical writer. I would drill into him daily, 'Kid, obscure your meaning, and you will become famous.' Then it will give you a convenient loophole to escape if you ever have to. If anyone attacks you, then you can very easily call him 'another,' because in reality you, yourself, if honest with yourself, as you sometimes should be, do not quite know what you mean yourself. In that way you'll have it on him, even though he won't know. Anyway, a conscience is sometimes convenient even to a technical man.

"If you want to throw a few additional smoke screens into the article, which is always desirable, puncture it with stars, crosses and other mysterious marks, - the harder to understand the better. Then have a number of footnotes that correspond, but mean nothing. Be sure that you refer as authority to some society that you defy him to find out anything about, such as 'Flannigan in the May, 1852, proceedings of Erin-Go-Bragh.' Make it as difficult as possible for your reader to follow - that's genius.

"And here is some advice that ought to be italicized: If you disagree with another author and want to pillorize him before your technical disciple (you really care about nobody else!) put in an extra footnote and refer to him as the authority for something you know is wrong. If done naively, it has the effect of TNT. The ordinary effort of the layman in such matters is childish in comparison.

"Always quarrel with your scientific brother in a dignified manner. Begin with, 'May I have the honor to explain?' The beauty about such open, gentlemanly controversy is that you may quite as often be as near right or as near wrong as the other fellow. I stress this, because I feel it is an important accomplishment in technical writing. How fully equipped is a technical writer who can tell a man he is a damn fool in language that leaves him flattered!

"Then by all means, if you are a government technical employee, have at least three or four other technical employees read critically your manuscript before it is ready for the printed page. The beauty here lies in the fact that when they get through with it all such annoying superfluities as personality of the author have disappeared. Don't bother about the lack of capabilities of those who read the manuscript. The chances are that unconsciously they may improve it, as in the case of the hitherto homely person who developed into a handsome man after a horse had stepped on his face. And during this process of critique, if you ever wince when they put the hot iron into your soul, you will never make a technical writer, and, therefore, there may be some hope for you.

"And please remember as a technical writer that nothing is ever perfect. If you are in a great art gallery and the simple-minded folk are admiring the 'Venus de Milo' in their crude, enthusiastic way, remember your training and take issue with the work. Suggest that it is not true to nature because it does not have one or two warts on the feet. Point out that there are no varicose veins on the leg.

"I almost forgot to say that brevity, being the soul of wit, has no place in a technical article.

"If the dream child that I have instructed (and he is no synthetic kid) can follow me, it may be said of him with apologies to Kipling, 'Then you'll be a man, my son; you'll be a man.'"--Literary Digest.

Saying It With Fire Signs

By W. B. Rice, Weiser

We have long recognized that man-caused fires offer the best field for missionary work; that such fires can only be eliminated through educational and publicity work. More recently we have been inspired by the bright idea that this can best be done by the posting of cardboard signs on the Forest. Apparently without much analysis of the psychology of the thing, attempts have been made to get a large variety of catchy signs, novel wordings, etc., assuming that this would maintain interest and keep the fire question alive in the minds of users of the Forest. At one time we even went to the extreme of offering prizes for the best slogan to be broadcasted on the Forest.

Just to quote a few originated by the Service and the Western Conservation and Forestry Association:

> "Protect young trees; seedlings of to-day are pay rolls of tomorrow - Don't Burn them Up."
>
> "You hit it - Settlers - Loggers - Smokers - Campers - Forests are Community Wealth - Put Fire Out."
>
> "You pay higher taxes if forests burn. Do you like it?"
>
> "Your home on fire, picture it! On you depend the homes of others. Be careful with fire."

Too long, all of them, and mostly wasted effort. What does the average careless citizen care about the pay rolls of tomorrow, or community wealth? What person really gives serious consideration to lowering federal taxes by his own effort? What a nimble imagination to picture your home burning up, ignited by a match dropped in the woods a hundred miles away! These and many more.

The most striking thing about all of these signs is that everyone is an effort to educate, an argument, an appeal. The place for education, argument, and appeal is off the forest and outside of fire season; in the schoolroom, newspapers, clubs, and associations, and I believe our campaign in that line has been fairly successful. Ask any hundred people and I venture that all of them will admit that they know that they ought to be careful with fire in the woods and why. But our fire records do not show that they are convinced that they must be careful with fire.

Let us continue to educate, argue, appeal, and implore before they get on the Forest, and stop there. After they are on the Forest we should concentrate on the one idea "must." Our Forest signs should tell the traveler in four or five words "We have explained, we have appealed, you are now on the Forest. There is no further argument. You must be careful with fire."

And so I recommend for all of our Forest signs what an advertising man would call the "simple command."

"Be careful with fire."
"Put out your camp fire."
"Put out that match."
"Put out that cigarette."

The smaller the variety of wordings, the more noticeable. After a man has passed a hundred signs commanding him to put his fire out he may be convinced that he ought to do it. He will not be convinced by a hundred different signs about pay rolls, taxes, community wealth, fishing, and hunting.

Why not take a tip from the veteran advertiser who confronts you every day on the billboards with the simple command:

"Smoke Chesterfields. They Satisfy."

(Supervisor Rice's suggestions for sign wording are excellent as far as they go, but they don't go far enough; in other words, they lack the "reason why." The advertiser doesn't simply say "Smoke Chesterfields," but adds "They Satisfy," which after all is what puts the punch into the slogan and gets it across. Our own slogan "Prevent Forest Fires - It Pays" is built on the same lines as this tobacco sign.--Ed.)

Are the Days of the Cattlemen Numbered?

By H. C. Hilton, Medicine Bow

The Wyoming Stockmen's Loan Association has been organized recently for the purpose of making advances to small stockmen who have been unable to secure loans through the War Finance Corporation. The directors of this association have recently agreed, in considering the present condition of the sheep and cattle owners, that the average sheepman should be able to get upon his feet in two years, but that it will take at least seven years for the cattleman, and some of the directors thought ten years would be more like it.

In making loans to the small ranchman, it is the policy of the Association to try and get him to split up his holdings and to diversify his crops, not depending solely upon hay, and sheep or cattle, as the case may be. In doing this, they have already secured the placing of ten to twelve milk cows each on several ranches in a valley adjoining the Forest and they now are working to get each of the men to take from 200 to 300 sheep and for them to join together in running a band upon the Forest. Is this not exactly the aim of the Forest Service in securing a greater diversity of the grazing privileges? It also appears that by cooperating with this association it might be possible to secure the endorsement of the association in getting permittees to use better methods of handling, practice better methods of winter feeding, use better breeding stock and to develop community use.

Comments on Mather Field Ideas

By James W. Girard, D-1

I have read the reports of the Mather Field Fire Conference with a great deal of interest. It is, in my opinion, the most important conference that the Forest Service has ever held on the subject of protection. Many excellent ideas were advanced and discussed. The importance of schedules, certain standards, preparedness, and detailed plans were strongly emphasized. These things are very important. There is no argument to the contrary. They are a part of the real fundamentals of the protection game.

I am glad to see the importance of these things strongly emphasized; but in the final analysis it must be admitted that the type of men employed as rangers, and the type of men that the rangers or supervisors can get for smoke chasers and guards is the most important phase of forest protection. Protection is the big problem in District 1. Forest management, good silvicultural practice, marking rules, and cutting methods are of small importance right now in comparison.

The thing then that we need most is men who know the best and most effective way to handle fires under the wide range of conditions that are found in this region.

As stated before, detailed fire plans are necessary, but knowing exactly how to tackle the fire, and what to do are far more important.

We should all be expert fire fighters to the extent of our capabilities under the circumstances. This is particularly true of the ranger force, but with an average of 2 or 3 years of service per ranger, how can we be efficient in this particular line of work?

Most of the men working out of the District Forester's office should also be expert fire fighters, not in theory only, but in practice.

During the past six or eight years, we have made wonderful progress in fire plans, improvements, equipment, transportation, detection, etc.; but the same progress has not been made in the development of better fire-fighting methods. Our detection and mobilization have to-day far outstripped our suppression.

The most important phase of the protection game - improved practice on the line of battle - has suffered very seriously for lack of systematic, practical--theoretical development. There are four methods of getting experience - the cut and try or haphazard method, the purely mechanical method, the theoretical-practical method, and the practical-theoretical method. The first is too expensive because it is very slow. The second is not very effective because fundamental principles are not discovered and worked out. But the other two methods of obtaining experience are the ones that count for the most. These two methods may be illustrated as follows:

A difficult mathematical problem is solved by an expert in mathematics. He proceeds to analyze, to discover laws and principles, and through the application of these principles the problem is solved. This is theoretical-practical experience. The practical-theoretical experience is obtained by the opposite procedure. The expert proceeds to teach the solution of this problem to some one else. Step by step he sets forth the practice and then explains the principles underlying the practice. The man who is thus taught learns to solve the problem very quickly and gets the practical-theoretical experience. This is the most effective because satisfactory results are obtained in the shortest time possible.

There should be no friction between theory and practice. The most valuable experience demands both. The quickest method of obtaining this experience in fire protection demands that the theory should supplement the practice and not precede it. The condition conducive to securing the most valuable experience is in actually taking part in the performance, supplemented by an adequate theoretical interpretation of that performance.

A man is expert in any line of work only to the extent that he has developed right practice by the necessary practical and reflective judgment, based on actual opportunity to test his judgment in previous practical experiences.

Concrete experience, recalled at the proper time is the basis upon which practical judgment is formed, but practical judgment can not be more comprehensive than one's previous experience.

The place then to teach fire fighting is on the fire line and not in a training camp. I am strongly in favor of the training camp to train forest officers in certain lines of Forest Service work, but not for the fire game.

A training camp would do a wonderful lot of good in the way of familiarizing Forest officers with general procedure, use of forms, need of plans, etc.; but no man can ever realize what fire will do without actually seeing it.

More good can be done in one day on the fire line in the way of giving instructions than could be done in a training camp in a month.

My belief is that the importance of this phase of protection should be more strongly emphasized, and a special effort made to give more instructions to the men on the ground.

It is my belief that this can best be accomplished by a staff of experts in fire suppression traveling out of a central office, going from Forest to Forest and from fire to fire, and giving instructions to the men on the line. Instruction is far more valuable in the fire game than inspection.

The District Forester followed this plan to some extent during 1921, and the results speak for its effectiveness.

Comments on Mather Field Ideas (Cont.)

We may talk plans and organization from now until doomsday, but we will never get satisfactory results until we get first-class men for lookouts, guards and smoke chasers; men that are intensely interested in fire protection; men that know what to do and have enough guts to stay with a fire if there is any possibility of bringing it under control.

"Adam-----Had 'Em."

By A. H. Carhart, D-2

When the recreational use of National Forests reaches five or six million forest visitors per year, one questions just why they come. This use has sprung up in the last five or six years in a manner which has made it a major activity. It directly serves more people than all other forest uses combined.

Such questions as: "Is it permanent?" "Are we creating a demand for it, or is it growing because people are in need of outdoor life?" present themselves to every forest man.

The demand for outdoor life is just as much a permanent part of modern man as his desire to live in communities, to build a home, or many other well defined characteristics. He inherited all these from a string of ancestors that runs back to several jumps before Noah set sail. They are a part of the fiber of his make-up.

Scientists estimate that man has been on earth 200,000 years. Just reckon the amount of that time he has lived under city conditions. Only about 1/2000 of his racial life. In truth man is "not at home" in city life as we know it to-day any more than an Airedale pup is perfectly contented when he is moved from the old familiar kennel where he was born. The pup sits back and howls, expressing his feeling of restlessness at being in unfamiliar conditions. City man takes a dozen or so outing magazines, buys expensive, useless fishing plunder and reads the Country Gentleman to satisfy, in part, his longing for the outdoors.

Why, it is just as natural for man to seek life in the outdoors as it is for a kid to get into a jam jar. The more artificial city life becomes, the more he will seek wilderness.

I'll bet Adam had spells when he would turn to Eve and say: "I'm getting darned tired of going out nights, catching the 5:15 to get home in time for dinner, rushing out to lunch at the club each noon, and being so strung u that I can't sleep. I'm going camping, that's what."

Think it over. What chance has modern man, an inheritor of racial experience which has been built up in 2,000 centuries of outdoor life? He simply must have some outdoor life to feel right. Outdoors is his natural range.

You bet outdoor recreation is permanent. It is just as permanent a demand as the call for beefsteaks. So long as we grow forests outdoors we can figure that the gay tourist is going to be with us.

Field Record of Forest Officers

1921

A record of the field time of Supervisors and Rangers was not included in the list of allotment conference exhibits called for by the Forester. However, from records compiled in certain Districts the collection of some data on this important feature of administration was possible.

In passing, it must be made clear that without qualifications "Field Days" means little. The emphasis is upon the need for the maximum number of days given to field work which will yield the greatest volume of worth while results; emphasis is not laid merely to get established a record of a large number of mere days away from home.--E. W.K.

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"A crow flying over a field sees carrion; a bee sees honey."--Japane proverb.

Supervisors' Field Time

District 1: Average number of field days of all Supervisors and staff men in Supervisor's office 121.5

District 2: Of the so-called field season of 5 to 6 months duration the Supervisor spent in the field 48.36%

District 3: No record at hand.

District 4: Average, all Supervisors for the year 1921 . . . . . . 130 days

District 5: No record at hand.

District 6: Average all Supervisors for the year . . . . 127 days

District 7: Average all Supervisors for the year . . . . 99 days

District 8: Tongass Forest . . . . 28 "
Chugach Forest, no record at hand.

Rangers' Field Time

District 1

Period - July 1 to December 31, 1922

Forest	No. Rangers Counted	Percentage of total time on field work
Helena	4	54%
Madison	7	63%
Deerlodge	6	76%
Lolo	6	70%
Jefferson	11	54%
Gallatin	6	61%
Beaverhead	9	53%
	Average	61%

District 2

Period - So-called field season 1921

Arapaho	3	53.30%
Battlement	6	53.89"
Big Horn	7	51.43"
Black Hills	8	46.90"
Colorado	7	49.51"
Cochetopa	5	55.54"
Rio Grande	6	68.39"
	Average for all Forests	57.2 "

District 3

Weighted yearlong average of time given to field work by 13 Rangers on three Forests is reported at 52.00%

Districts 4 and 5

No comparable figures available.

District 6

The record from the Whitman shows that seven Rangers there spent in the field an average for the year 1921 of 64% of the total days worked.

Field Record of Forest Officers (Cont.)

District 7

District Seven Rangers during 1921 gave to field work of total days worked 69%

District 8

District 8 Rangers during 1921 gave to days away from headquarters of the total worked 45%

The Rangers of District 8 spent an additional 5% of total days worked scaling logs in the bays which are within striking distance of their respective headquarters.

He Likes 'Em, Too

Now that I have left the Service, I do not recall a contribution to the Service Bulletin from anyone outside of the organization. However, because I still feel I am a part of the organization, because of the spirit which dominates it and dominates the work I am in here, and because I have something to say, I am prompted to write these few sentences.

The few months which I have spent at Iowa State College as an instructor in the Forestry Department have aroused my interest in forestry anew because of the personnel to be, which will mean much to the Service in the future. As a Forest officer, I recall distinctly how profitable were the comments which reached me through the Service Bulletin and the District 2 Bulletin from other men. I find the boys here are vitally and intensely interested in what is going on in the Forest Service, particularly of a personal nature. Just in so far as we will be able to mold their opinion of the Service as it is and plant in their characters during this formative stage the right ideals, will we be able to wield a strong influence in the Forest Service of the future. It seems to me that one of the many ways in which an int mate view of the Forest Service might be had is to place in their hands such publications as the Service Bulletin and the various district bulletins. As a former officer I am proud of the Rocky Mountain District Bulletin and woul not be ashamed to show it to any man. The SIX-TWENTY-SIX of the North Pacific is a splendid publication, and above all, I wish we could have the Servic Bulletin.--D.B.Jeffers, Ex-D-2 (Iowa State College)

WASHINGTON NOTES

The Assistant Solicitor informed the Forest Service that on April 19, 1922, the Department of Justice had instituted proceedings against the Dover Lumbe Company to recover the sum of $10,806.57 for fire trespass on the Cabinet National Forest.

The fire occurred in the year 1919 on a timber sale area on which the company was operating. It is alleged that the foreman of the company did broadcast brush burning during the absence of the Forest officers and at a time when he was warned not to do so.--P.K.

Arthur C. Ringland, formerly District Forester at Albuquerque and now the representative of the American Relief Administration, recently presented to the Council of the League of Nations assembled in Geneva, Switzerland, a pla for the feeding of 27,000 Russian refugees in Constantinople, on condition that the members of the League raise funds for the evacuation of the refugees into Europe at the end of four months. Announcement was also made of an offer of $50,000 from the Y.M.C.A. for the vocational training of the refugees.

Following Mr. Ringland's speech, the Earl of Balfour pledged Great Britain to give 10,000 pounds, or one-third of the amount needed to meet the Relief Administration offer. Mr. Ringland is the first American to appear before the Council in such an official way, and his appearance, therefore, was the subject of much comment in leage quarters.

Work in the Washington office under the new "daylight saving plan" has proceeded as usual. However, commuting forest officers, egged on by Mayor Kellster of Kensington, Md., have succeeded in advancing lunch one hour, thereby making it a breakfast dessert for foresters living in the District.

National Forest Receipts for the period July 1, 1921, to April 30, 1922, showed an increase of $1,735,045 over the same period last fiscal year. The increase in Grazing alone amounts to $1,901,083, but Timber Sales show a decrease of $148,241. D-7 is the only District showing a decrease in receipts, while D-4's increase has topped the half million dollar mark.

Bear Facts: In June last year, at the request of Dr. C. Hart Merriam, the well-known scientist of Washington, the Branch of Grazing asked Supervisors to send in with their annual grazing reports a statement and estimate covering the number of grizzly bears found on their Forests, together with their location as near as that could be ascertained. The information was tabulated in this office and conveyed to Dr. Merriam a few days ago.

In acknowledging receipt of the report, Dr. Merriam asked us to express to the men in the field who had contributed this information his grateful thanks for the trouble they had been put to in securing the figures.

Dr. Merriam, former Chief of the Biological Survey, is now carrying on his research work through funds furnished by the late E. H. Harriman, who became tremendously interested in Dr. Merriam's studies along scientific lines and left quite a large sum of money with which to continue his work.

Dr. Merriam is recognized as probably the greatest living authority on bears. He is now bringing to a close and getting ready for publication a monograph on grizzly bears in which the information secured from the Service is, he says, of great value to him.--W.C.B.

Col. Greeley left for the West Monday, May 22.

FOREST PRODUCTS LABORATORY

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Field Record of Forest Officers (Cont.)

District 7

District Seven Rangers during 1921 gave to field work of total days worked 69%

District 8

District 8 Rangers during 1921 gave to days away from headquarters of the total worked 45%

The Rangers of District 8 spent an additional 5% of total days worked scaling logs in the bays which are within striking distance of their respective headquarters.

He Likes 'Em, Too

Now that I have left the Service, I do not recall a contribution to the Service Bulletin from anyone outside of the organization. However, because I still feel I am a part of the organization, because of the spirit which dominates it and dominates the work I am in here, and because I have something to say, I am prompted to write these few sentences.

The few months which I have spent at Iowa State College as an instructor in the Forestry Department have aroused my interest in forestry anew because of the personnel to be, which will mean much to the Service in the future. As a Forest officer, I recall distinctly how profitable were the co ments which reached me through the Service Bulletin and the District 2 Bulletin from other men. I find the boys here are vitally and intensely interested in what is going on in the Forest Service, particularly of a personal nature. Just in so far as we will be able to mold their opinion of the Ser ice as it is and plant in their characters during this formative stage the right ideals, will we be able to wield a strong influence in the Forest Service of the future. It seems to me that one of the many ways in which an int mate view of the Forest Service might be had is to place in their hands such publications as the Service Bulletin and the various district bulletins. As a former officer I am proud of the Rocky Mountain District Bulletin and would not be ashamed to show it to any man. The SIX-TWENTY-SIX of the North Pacific is a splendid publication, and above all, I wish we could have the Service Bulletin.--D.B.Jeffers, Ex-D-2 (Iowa State College)

WASHINGTON NOTES

The Assistant Solicitor informed the Forest Service that on April 19, 1922, the Department of Justice had instituted proceedings against the Dover Lumber Company to recover the sum of $10,806.57 for fire trespass on the Cabinet National Forest.

The fire occurred in the year 1919 on a timber sale area on which the company was operating. It is alleged that the foreman of the company did broadcast brush burning during the absence of the Forest officers and at a time when he was warned not to do so.--P.K.

Arthur C. Ringland, formerly District Forester at Albuquerque and now the representative of the American Relief Administration, recently presented to the Council of the League of Nations assembled in Geneva, Switzerland, a pl for the feeding of 27,000 Russian refugees in Constantinople, on condition that the members of the League raise funds for the evacuation of the refuge s into Europe at the end of four months. Announcement was also made of an offer of $50,000 from the Y.M.C.A. for the vocational training of the refugee .

Following Mr. Ringland's speech, the Earl of Balfour pledged Great Britain to give 10,000 pounds, or one-third of the amount needed to meet th Relief Administration offer. Mr. Ringland is the first American to appear before the Council in such an official way, and his appearance, therefore, was the subject of much comment in leage quarters.

Washington Notes (Cont.)

Work in the Washington office under the new "daylight slaving plan" has proceeded as usual. However, commuting forest officers, egged on by Mayor Kelleter of Kensington, Md., have succeeded in advancing lunch one hour, thereby making it a breakfast dessert for foresters living in the District.

National Forest Receipts for the period July 1, 1921, to April 30, 1922, showed an increase of $1,735,045 over the same period last fiscal year. The increase in Grazing alone amounts to $1,901,083, but Timber Sales show a decrease of $148,241. D-7 is the only District showing a decrease in receipts, while D-4's increase has topped the half million dollar mark.

Bear Facts: In June last year, at the request of Dr. C. Hart Merriam, the well-known scientist of Washington, the Branch of Grazing asked Supervisors to send in with their annual grazing reports a statement and estimate covering the number of grizzly bears found on their Forests, together with their location as near as that could be ascertained. The information was tabulated in this office and conveyed to Dr. Merriam a few days ago.

In acknowledging receipt of the report, Dr. Merriam asked us to express to the men in the field who had contributed this information his grateful thanks for the trouble they had been put to in securing the figures.

Dr. Merriam, former Chief of the Biological Survey, is now carrying on his research work through funds furnished by the late E. H. Harriman, who became tremendously interested in Dr. Merriam's studies along scientific lines and left quite a large sum of money with which to continue his work.

Dr. Merriam is recognized as probably the greatest living authority on bears. He is now bringing to a close and getting ready for publication a monograph on grizzly bears in which the information secured from the Service is, he says, of great value to him.--W.C.B.

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Forestry on the Biltmore Estate

By Ferdinand W. Haasis, Appalachian Exp. Station

The Appalachian Forest Experiment Station has two current projects on the Biltmore Estate near Asheville. The sample plots established by E. H. Frothingham, Verne Rhoades, and L. J. Young in 1916 have just been remeasured and re-marked for thinning by members of the Station staff. It is expected that some very interesting results will appear when the data are analyzed. One result of the first thinning is already quite evident: in a mixed stand of pitch pine, shortleaf pine and white pine, the last species has been very appreciably stimulated by the opening up of the crown cover.

In the plots where numbering had been done with white paint, it was necessary to repaint at this time. Near one of the plots there is quite a colony of negroes who have evidently been removing the dead timber for fuelwood. In some cases we would find stumps instead of the numbered trees which the map showed. Yet more confusing were the results of a peculiar mental kink which caused a transferring of the brass tag from the tree removed to another healthy tree, usually of a totally different size and personality!

It was found that on the average the dead trees had shrunk 0.1 inch in diameter since the last measurement, apparently as a result of seasoning.

Dr. Schenck has just recently sent from Germany a great mass of material dealing with the plantations which he established on the Estate. This includes maps showing the forest compartments and some of the planting areas, data on the planting, and observations of the condition of the plantations on several subsequent dates.

The place of the records which apparently have disappeared in this country is thus, to a large extent, taken by this veritable gold mine received from abroad. When this data is analyzed and properly correlated with present conditions, a mass of exceedingly valuable information will be available covering the entire history of a large number of plantations, varying in age from ten to over twenty years. The figures and descriptions for wild stands are still somewhat incomplete, but a certain amount of data has been received which will make these records, too, more available.

The more one works on the Biltmore Estate and observes and studies the forestry situation there, the more he comes to appreciate the great significance of this area for Southern Appalachian silviculture. Here forestry has been practiced for many years. We have only to look and learn.

Unfortunately, parts of the Estate are from time to time being disposed of for building developments, and many of the plantations are destined soon to become firewood or fence posts. American forestry would certainly be the loser if any great portion of this land should be thus disposed of, but of course economic conditions must prevail, and if that is the highest use, then it is to home-building that these areas will be dedicated.

DISTRICT 1 - NORTHERN DISTRICT

Broadcast Burning of Slash: The burning of logging slash broadcast in north Idaho and western Montana is the chief enemy to the conservation of forest wealth. It has aggravated the menace from forest fires and has delayed the restoration of forest conditions.

The practice of this method was originally instituted and put into effect as a measure to reduce the menace of fire to adjacent stands of timber. It received the sanction of the Timber Protective Associations. It was used to comply with State laws which were drawn up after an insufficient study of the situation. Now with from 10 to 15 years' experience with the method, it has proved to be a temporary expedient only. It is a failure as a permanent measure of protection from fire. For the first 3 to 5 years, the fire hazard is materially reduced. But thereafter, the menace of the burned over tract increases, and commonly exceeds the hazard of the unburned slash of the same age. The broadcast burn generally creates a larger amount of dead inflammable material than the slash which it consumed, by killing the advance growth, immature and unmerchantable trees which comprise so large a part of the timber stands of this region. The killed material wind throws to pile up jackstrawlike on an area. It is impossible to fight a fire in such a tangle with any reasonable show of success. Fires in this type of cover are Class C fires.

It is doubtful if the hazard of undisposed of slash will be carried the 3 to 7 years when it is most acute. The disposal by piling and burning of the slash in the most hazardous accumulations and in the most menacing situations, and the leaving of the remaindag will much more effectively reduce the fire hazard than broadcast burning. Initial costs may be somewhat more, but subsequent costs of additional fire fighting and losses of equipment, logs and timber attendant on broadcast burning will, it is believed, amply justify the change of method. The general dissatisfaction with broadcast burning favors a change.

Under the modified method of disposal the fire hazard lowers rapidly; the immature trees and advance growth take possession of the ground and quickly restore forest conditions. On the broadcast burned tracts the fire hazard progressively increases for at least 15 years. A second burn of the entire area is inevitable if a fire once starts. Forest conditions are destroyed; the return of the forest cover is delayed indefinitely; devastation is invited and comes. For the effective reduction of the fire hazard and for the conservation of forest growth and forest conditions, the broadcast burn must be stopped as a general practice in north Idaho and western Montana, and some modified form of slash disposal be substituted in its stead.--W.C.Lowdermilk.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Planting on the Pike: The reforestation operation on the Pike Forest is located a mile north of the Pikes Peak Cog Road this spring, at an elevation of about 10,000 feet. The Cog Road ran a special train from Manitou to Mountain View station to transport the trees and equipment. This year's operations will be completed about the middle of June; there will be two years more work in this section of the Pikes Peak region, after which it is planned to start planting on the Monument burn, which is located between Mt. Herman and Woodland Park. This area contains approximately 10,000 acres in the yellow pine and Douglas fir types, which need reforesting.

Duluth & Iron Range Railroad Exhibit Car: H. N. Wheeler, of Public Relations, joined the D. & I. R. Exhibit car at St. Paul on April 27 for a tour through Iowa and as far west as Omaha. The car contains a tent, fireplace cooking utensils, pack sacks with dummy packages of food stuff for a ten-day trip for two people; also a little 5-foot birch bark canoe, axes, model stone fireplace with an electric fire in it, and two small log ranger stations. There are specimens of game and fur bearing animals, birds and fish. The windows are fitted with transparencies of scenes on the Superior Forest. To date, 22,000 people have passed through the car, an average of 3,000 per day, and talks to school children have been given by Mr. Wheeler at numerous places.

Study Courses: As the number of our courses is increased, thereby offering a wider range of choice, the number participating also increases. This year 197 individuals worked on one or more courses. Of these, 23 are attached to the District office and 174 to the field force. The 174 represents 69 per cent of our permanent field employees, including clerks and stenographers. One of the interesting things about our courses is that they have been participated in by representatives of every grade and position from the District Forester down, and another is that forestry courses are the most popular.

DISTRICT 3 - SOUTHWESTERN DISTRICT

New Mexico Supplies Building Material to Maine: One of the local mills is shipping finished door and window casings in carload lots to the State of Maine. The white pine stands of Maine are sure enough becoming exhausted when a New Mexico manufacturer can compete with the manufacturers of that State.

Why of the Upper Rio Puerco? This dirty, yellow, silt-laden, swinish stream as the name is meant to imply, is a comparatively young river, if the memory of native people who live along its banks is correct. Recently a resident of San Luis, a Mexican placita about twenty-five miles south of Cuba, N. M., said that when his father came to that locality fifty years ago, there was no Rio Puerco, no stream of any kind there. The valley was broad and nearly level, uncut by the deep arroyos that now mar the view in every direction. When asked to explain the change, without any prompting or suggestion, he replied that when his father came there was plenty of timber in the mountains to the north (now the Jemez division of the Santa Fe Forest) and the water from the snows and rains was held back. Then the timber was cut, fires ran through and nothing was left to keep the moisture, so that the water from the meltin snow rushed down from the hills all at once. Thus was a channel begun which has become a gorge, a miniature grand canyon, and every year this gorge is being cut deeper and wider. The gorge is not all of the harm, however, for every year, by some time in June, the snow water is exhausted, the river and the springs go dry, and man and beast are left dependent upon water caught in pools from summer rains. The Rio Puerco carries probably more silt than any other stream of its size in the Southwest, and the great quantities of mud that are dumped into the Rio Grande are a constant menace to agriculture and to reclamation projects.

Pollen Smoke: Does blowing pollen give rise to "false smokes?" Sitgreaves rangers say it does. From what little is known of the subject, cedar and juniper pollen blows too early to cause any false alarms, but yellow pine pollen will bear watching. How about starting an observation sheet in the Fire Atlas on which to record whether, when, and what trees give pollen smokes? Not that any Forest is going to burn up for lack of this information. Neither will ungreased tools cause any Class C'S. But both are typical examples of that infinity of little things, the doing or not doing of which eventually spells the difference between a Fire Plan and a Fire Guess.

Policy Not Modified: "It came to me as quite a surprise that a recent exchange of views in the Service Weekly Bulletin on the general policy of 'tell it to the Judge' had had the effect of unsettling some Forest Officers as to law enforcement work. The policy of D-3 and all other Districts remains as described on Page 43 of the Mather Field proceedings and should be followed. Forest Officers should not make the mistake of allowing themselves to be swayed by divergent opinions expressed at times in the Weekly Bulletin, which is being used as an open forum and not as a vehicle for general instructions."--F.C.W.P.

Verde Valley Waking Up: Through the efforts of Ranger Mutz on the Prescott, the Elks Lodge at Jerome has taken action for the establishment and promotion of a public playground and camp site on Mingus Mountain, and has asked the cooperation of the Forest Service in building a road to this area. A similar resolution has also been submitted by the Chamber of Commerce of the Verde Valley. The summit of Mingus Mountain is particularly suited to the needs of Jerome and other nearby towns, as it is located within about 10 miles of Jerome and within approximately one mile of the Jerome Highway, thereby requiring very little work in the construction of a spur road to the top. The view from the summit looking across the Verde River into the multi-colored cliffs of Oak Creek and the Coconino Rim is one of the finest in the Southwest.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Ranger Wheeler Does Good Work: A complaint filed by this office with the County Attorney last week resulted in the arrest and conviction of Lyle Crane for the theft of a Forest Service Standard compass. With the aid of a search warrant the compass was located in a suit case owned by the defendant. Crane was fined $35.00 and costs and, in addition, was given a suspended jail sentence. The success of the prosecution is due to some excellent work by Ranger A. H. Wheeler.--Salmon.

Range Experiments; Mr. Becraft of the Utah Agricultural College was in conference Saturday with Sampson and Malmsten of the Great Basin Experiment Station and the Grazing men of this office, at which time tentative plans were drawn up for the beginning of some range experiments which may be conducted on the Cache Forest by the Forest Service and the Utah Agricultural College in cooperation.

Close Forest Streams: Supervisor McGowan appeared before the Lander County Commissioners and took up the matter of closing certain streams for fishing inside the Forest boundary. It was agreed that the Forest Service would post the closed areas with warning signs, and it was agreed that the Commissioners would close, according to the State law, several parts of several streams on the Toyabe Forest. An agreement was made whereby the County Game Warden will appoint the Forest Rangers recommended by Supervisor McGowan as Deputy Game Wardens.

Ranger Bill Says:

'Pears like a lot of our efficiency experts think more of savin' dollars than getting results.

I see that they've decided a feller can wear 'bout any kind of uniform he wants to, which suggestion I take it will be generally follered.

The trouble with you Service follers, said Editor News of the Pioneer, is that y'xpect to get a $1,000 worth of publicity out of a nickle's worth of news.

DISTRICT 5 - CALIFORNIA DISTRICT

Another Cooperator: The Yosemite Valley Railroad Company is now entering into an agreement to cooperate with the Service in the prevention of fires on the Stanislaus and Sierra Forests.

The company is having signs made prohibiting smoking on the observation platforms of their cars and goes a step farther to have the brakeman and conductor distribute cards to passengers who intend to smoke on the platforms explaining why this should not be done.

They are burning off their right of way from the track out at least 20 feet on each side where a fire line not less than 3 feet wide is being built. They are using a "weed killer" to clear their track of weed and grass.

The company deposits a substantial amount in the cooperative fund too. All in all, it is a very progressive agreement, the credit for which goes to the local Forest Officers.

A Laugh Out of Grazing Permits:

F.G.C. (second clerk) (instructing Miss B---- in the gentle art of placing brand marks, etc., on grazing permits):

"Just copy onto the permit whatever brand the permittee places on his application.

Miss B. (picking up an application where the permittee has several different earmarks): "How's it come that these cattle have four ears!!" --Stanislaus.

Honored Guest: Supervisor Bigelow, of the Tahoe Forest, was given a surprise at a dinner of representative citizens and businessmen of Nevada City recently. Bigelow had attended the dinner in the belief that it was in honor of the birthday of one of the citizens of the town. After the dinner the chairman arose and made a very complimentary speech regarding Mr. Bigelow's standing in the community and the confidence which the community reposes in Mr. Bigelow and the Forest Service which he represents; then tendering to Mr. Bigelow a gift of a watch chain made from nuggets taken from the Mugwump Mine in the Alleghany District.

Sign Dope from the Eldorado: Supervisor Smith has sent in a number of letters received in reply to a circular letter sent out to parties who had left their name and address on painted signboards. The tone of these replies indicates that most of this is done by people who are thoughtless and do not mean to destroy property. In fact, a number of the letters showed a mighty fine spirit and it is certain that most of these parties will hereafter help us to protect our signs. The Eldorado has done a lot of missionary work along this line and it is bearing results.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Central Fire Dispatcher System: "This system, while tying one man so close to his work, so close in fact that he can do nothing but direct the protective organization, frees to a great extent all the other members of the permanent force, and at the same time makes them more available and valuable for both fire control and other work. It frees the Supervisor, at the same time keeps him much closer in touch with existing conditions during the fire season, and gives better opportunity for more extensive traveling over the Forest. The central control station simply takes up all the work of handling fires, securing data for and making out the ten-day report and individual fire reports and is so in touch with the happenings that lost motion is reduced to a minimum and the work and correspondence in the Supervisor's office during the fire season is reduced at least 50 per cent. The forms D-6 Fire report, D-6 Assembly report and lookout forms are adequate. They are all that are needed besides the log to keep a complete and systematic record of the work."--C.C. Hall.

Of Scouts: Forest Assistant L. A. Isaac of the Chelan has been appointed Assistant Scout Master of the Okanogan troop, which now has a membership of 34. Mr. Isaac will give the boys their field and woodcraft work. An application for employment on the Chelan was received the other day. The interesting feature of the incident was the qualifications given. As special courses, the applicant gave "advanced scouting, camping and cooking," and as occupations requiring leadership he named "Scout leadership-troop officer." We believe this is a good recommendation for anybody. If he is a good scout he will probably be a good man.

Oregon Wool Growers' Assn. Meets: The 25th annual convention of the Oregon Wool Growers' Assn. was held in Pendleton February 10-11, and had the largest attendance of any meeting for several years.. Several addresses were made by men nationally known in the railroad and wool industries and much valuable information and advice was given.

The attitude of the association toward the Forest Service was very gratifying and the various factions which seemingly have existed during the past few years have buried their differences and are working to a common end. A representative advisory board was appointed for the various Forests in eastern Oregon, and a special meeting held at which various questions pertaining to the use of the National Forests by the sheepmen were discussed.--E. N. Kavanagh.

DISTRICT 7 - EASTERN DISTRICT

Profits on the Purchase Forests: In order to determine whether or not the purchase of forest lands in the east has been a profitable venture, aside from the benefits derived from the protection of the headwaters of navigable streams, a balance has been struck between the cost and the values of land and timber acquired.

The 2,047,718 acres of land acquired to date has cost $12,275,462.37, including all overhead expenses. The cost of administration, fire protection and improvements to date is $1,064,711.00. The total outlay by the Government to date is thus $13,340,173.37.

Receipts from lands acquired have amounted to $413,185.00. The average value of the land to-day is conservatively estimated to be $2.77 per acre, making the total value for land $6,089,364.00. In addition to that, the timber on these lands is estimated to be 4,557,220 M., with an average value of

$2.80 per M., making the value of the timber acquired $12,760,216.00. These three items, receipts, land and timber values total $19,262,765.00, and after the gross cost of $13,340,173.37 is deducted we find a net profit to the Government in the purchase of lands of $5,922,591.73.

A Column Headed "Forestry News" will henceforth appear one day each week in the Hot Springs (Arkansas) New Era under an arrangement perfected early this month between Supervisor Plymale and the editor.

A Trip To the "Holy Mountains" of New Hampshire put Assistant District Forester Stabler back in form after a protracted spring battle with the flu and kindred ills. As a result, he is again actively on the job in Operation with nothing more to do than to make our actual allotments for F. Y. 1923 look as pretty as our estimates did before last week's conference.

DISTRICT 8 - ALASKA DISTRICT

Recreation in D-8: The Seward chapter of the Loyal Order of Moose holds a site on the shores of Kenai Lake, under permit from the Forest Service, which it intends to develop into a public playground. It is planned during the coming summer to install tables, swings, benches, rest houses, booths, boat landing, and other improvements on the site and throw it open to the public under the supervision of its officers.

Several years ago, at the request of the citizens of Seward, the Forest Service surveyed out and set aside as summer home sites, a group of lots on the lake shore. Many of these are already occupied under permit, and the site is becoming very popular as the summer recreation grounds for the residents of Seward.--L.C.P.

An Alaskan College: The press on April 22 carried news of the opening this fall of the Alaska Agriculture College and School of Mines at Fairbanks. This will be probably the most unique college certainly in America and probably in the world, being located just south of the Arctic Circle in the heart of Alaska. It will open with a faculty of five professors. The college will be supported by Territorial and Federal appropriations. It should offer an opportunity for the teaching of forestry in some form, as the proper handling of the forests of Alaska will mean much to her future, and the youth of the Territory should be taught this.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. VI, No. 15 Washington, D. C. June 5-12, 1922.

PROVINCIALISM

by

Fred Morrell, D-1

In the Service meeting on April 20th, Mr. Murphy says: "A well-rounded policy of national forestry involves other things than National Forests. The average Service man does not appear to recognize this." Later on, he says: "The Service has been put on a national foundation in the matter of a national forest policy; but with the exception of the Forester's office and the Washington Branch of Forest Management, few people would know it from hearing the average Service man talk." The language is a little obscure, but I understand Mr. Murphy to say that only the Forester and the Washington Branch of Management, when Forestry is being discussed, speak about the national policy. And further along, Mr. Murphy says: "With regard to a national forest policy the part usually emphasized in the Districts is that which applies directly or indirectly to some phase of national forest activity.

It is not my purpose to expressly argue the subject of provincialism with Mr. Murphy. Probably most of us are provincial. But I don't believe he is fully informed regarding the attitude and activity of Service men in this connection in the western Districts. I want merely to discuss that phase of the subject for District One briefly, not with any idea of boasting, because other districts have probably done as much, or more than we have, and we have done nothing to be particularly proud about.

As long ago as the winter of 1919-20, the local chapter of the Society of American Foresters devoted the whole series of meetings to a discussion of this subject. The chapter has about ten meetings during the winter; the average attendance is about 25 men -- four-fifths of whom are Service employees. The papers and discussions probably average two and one half hours in length. During the winter just past, the meetings were devoted to a forest taxation study in which a majority of the men in the office took some part. -- I think it would not be an overstatement to say that the men in the Missoula office have put in 800 man-hours in these meetings, discussing subjects which have nothing to do with national forest administration directly or otherwise, and which do have directly to do with the broader national program. Many of the men at these meetings have never attended Forest schools and lay no claim to being foresters. The programs are largely arranged by Service men. These facts indicate to the writer what we have not failed to think about the broader national program.

In the matter of outside activity: while our ~~preference~~ Performance might have been much improved upon, something has been done. A year ago in April arrangements were made for an audience of 200 of Missoula's leading citizens to hear an address by Colonel Greeley on the subject, and arrangements have been made for a similar address before the National Editorial Association's annual meeting here in July. I have spoken to five Rotary and Kiwanis clubs before a total audience of about 400 leading men of the region, and before one high school audience of 400 on the national program. Several other men in the District have made similar talks.

Proposed forest codes have been prepared by Service men for Montana and Idaho, and we have done what we could to get them favorably considered. The national problem has been discussed twice at least by Service men before the Western Forestry and Conservation Association. Upon request from the Missoula office, two whole-day meetings of the North Idaho Forestry Association have been devoted to a discussion of minimum requirements, which is a phase of the national program. These meetings were attended by about 30 of the leading lumbermen of the state. I believe that members of the Washington office who have come in contact with these men during the past year will bear me out in the statement that they are thinking and talking about, and actively working on, the national program. It is not claimed that all of their interest is due to activity of Service men in the District, but I think we can claim credit for a large share of it. Not an insignificant percentage of news items given out by the Missoula office has related entirely to or contained reference to some phase of the question.

It is, of course, true that most of us in the west do not have much knowledge of State activities outside of the states in which our work lies. That might be remedied in part by the Washington office furnishing articles such as Colonel Greeley suggests, and I feel sure they would be read carefully and understandingly by a large percentage of western men. Such information would not in my judgment be as difficult to absorb as is the research material.

Important National Forest policies and problems are determined in Washington. There is a constant stream of information on the subject going east, and some of it comes to the attention of men not directly concerned in the work. There is no such information coming west as a matter of course on the national forest problem and state activities. Personally, I should like to know more about the subjects. If more material can be sent out in concrete form, I feel sure that many men will find time to read it.

Whence, Indeed Cometh the Noise?

By H. E. Flack, Holy Cross

Much has been said about reducing the paper work now required of the Forest Ranger. Individually, I can not figure out anything in the present office work that can be curtailed, but can see where some additional work can be taken on without working a hardship on the Ranger. In order to carry out "team work" why should'nt the Ranger cooperate with the Supervisor's office and send in properly written reports that will not have to be mulled over to gain the drift of the idea conveyed in a sheaf of memoranda scribbled in pencil on any piece of paper handy. Seems to me that a Ranger without any office work, with the exception of his service report monthly, is like a storekeeper who keeps accounts only of cash received and does not record his accounts payable. I believe that, in order to run a business of any kind, paper work is essential and, besides being a means of keeping tabs on things in general, it is a pleasant change from field work and has a bearing on developing a Ranger into a business man. Office work is a responsibility, and if we are to have more responsibility why not let it be paper work.

This is my reply to the "noise" heard by Mr. C. M. Granger.

When English Fords the Mississippi

Grazing Objectives

Forest Service Dignigied English:	Cowboy Talk:
1. Maintain the productivity of the forage resource.	1. Keep the grass growin'
2. Produce the maximum amount of meat and wool.	2. Get 'em fat.
3. Distribute the grazing privileges so as to secure the greatest good to the greatest number in the long run.	3. Treat 'em right.
4. Secure a system of management consistent with the proper protection and development of other resources.	4. Use good horse sense.

C. E. R.

Bill Stonehatchet and Forestry

By A. H. Carhart, D-2

Did you ever see a picnic party look for a spot where there wasn't a tree, where nothing but prairies were in view, where cactus and sagebrush, bunch grass and grasshoppers constituted the only vegetation?

Of course you didn't. It was a foolish question. But did you ever think why it is that every picnicker, camper, tourist, and dity dude, seeks tree-covered areas when he goes into the open?

The answer to that second question will state the reason for our being up against handling recreationists on National Forests so long as there is a green tree standing within their boundaries. For where there are green trees there also is out-door recreation of a very high quality.

Man of today is the heir of all experience which has come to the human race. If it has come often enough it is now instinct. Man instinctively turns to tree-covered areas when he gets into the open, and when the city man gets outdoors to play he makes tracks for the green trees.

Way back in the year one members of the Stonehatchet family found that the plains were places where the wind blew fiercely, the sun beat down, there was little food at many seasons and not much shelter. On the other hand Bill S. found that forests offered shelter, food, clothing, protection and comfort. He reasoned it out that the forest was a good place to live in. Maybe he had to work his brain overtime to come to this conclusion. Maybe he was caught out in the plains many times before he recognized the forest as a place of plenty and comfort. But the time came when he didn't need to get his brain all tangled up reasoning it out. He simply saw a forest, and immediately he thought of comfort and plenty.

The city man of today, or even the countryman, doesn't stop to reason about where he is going to camp. His several hundred times great grandaddy figured that all out for him. He just simply hits for the first green trees he spots and bogs down near them or rambles through the misty forest aisles.

Old Bill Stonehatchet laid the foundation for the one personal, direct, universal use of the forests that all of us can have---recreation. And just so long as he continues to have offspring in this world, so long as the human race exists, men will seek green trees when living in the open.

Is recreation a fundamental part of a forest? It surely is as long as there are green trees in a forest. We just can't keep people away from timbered areas when they seek play in the open even if we use a club.

FIRE STATISTICS
ELAPSED TIME RECORD FIRE SEASON 1921
(Mather Field Classification)

	D-2	D-3	D-4	D-5	D-6
	Per cent				
1. Discovery Time					
Within 15 min.	30	36	19.3	32	33.0
" 30 "	20	15	7.6	12	12.0
" 1 hour	15	15	11.0	11	8.6
" 6 hours	20	19	19.7	22	17.0
" 24 "	9	10	17.0	74	19.0
Over 24 "	16	5	25.4	9	10.3
2. Report Time (elapsed time between)					
Within 5 min.	61	64	59.2	50	65.9
" 15 "	8	17	9.7	16	12.6
" 30 "	9	8	8.2	10	7.2
" 1 hour	5	14	3.5	8	4.3
Over 1 "	17	7	19.4	16	10.0
3. Get-away Time (elapsed time between)					
Within 15 min.	73	77	54.9	77	64.6
" 30 "	12	14	16.3	9	16.3
" 1 hour	9	7	14.0	5	7.8
" 6 hours	5	1	8.2	5	7.2
" 24 "	1	1	5.1	3	3.6
Over 24 "	0	0	1.5	1	0.5
4. Travel Time					
Within 15 min.	30	19	10.9	27	22.5
" 30 "	22	13	11.2	16	9.3
" 1 hour	20	20	15.2	20	13.4
" 4 hours	24	37	38.1	28	33.1
Over 4 "	4	11	24.1	9	22.0
5. Control Time					
Within 1 hour	48	48	40.9	43	50.0
" 6 " 5 Min.	38	35	37.4	36	31.0
" 12 " 5 "	4	6	7.0	8	5.9
" 24 " 5 "	4	5	5.8	6	6.9
Over 24 " 5 "	6	6	8.9	7	6.2
Total Elapsed Time					
Abandoned within 1 hour	21	4	30.4	5	27.4
" 2 hours	5	5	4.1	6	5.5
" 6 "	18	24	12.5	21	13.4
" 12 "	7	16	9.9	12	8.7
" 24 "	18	18	11.2	17	11.3
Over 24 "	31	33	31.9	39	33.4
Per cent of C's	21	16	9	17	8

No records for Districts 1, 7 and 8.

Number and Average Cost of Fires By Classes Season 1921

	A		B		C		Total	Average
	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amount
District 1	820	$8.34	327	$64.05	189	$1,027.80	1,336	$166.00
District 2	175	3.88	150	25.71	89	139.00	415	42.00
District 3	208	6.86	155	20.61	71	460000	434	86.00
District 4	302	4.97	95	28.24	42	187.00	439	27.00
District 5	382	5.35	350	28.60	242	582.00	1,196	115.00
District 6	859	7.50	347	32.69	108	485.00	1,311	49.00
District 7	40	..	129	..	533	..	702	31.00
District 8	8	..	8	..	2	..	18	25.00

Man-caused Fires
and
Fire Law Enforcement Cases

Season 1921

	D-1	D-2	D-3	D-4	D-5	D-6	D-7
No. man-caused fires	787	316	253	263	656	814	702
" Fire law Enf. cases	66	178	46	54	318	233	26

E. W. K.

Is It True?

A would-be Forest Assistant wrote, with reference to timber survey work, "A very rough map is made in the field, and these are remade into a large and more accurate one in the office."

WASHINGTON NOTES

Assistant Chief Engineer G. H. Lautz has left for a field inspection trip in Districts 4 and 6.

Grazing Examiner C. L. Forsling has been selected to succeed Doctor Sampson as Director of the Great Basin Experiment Station.

Forsling entered the Forest Service in 1915; was placed in charge of reconnaissance on the Cache National Forest, and was transferred to the Jornada Range Reserve in 1916. He worked as an assistant on the Jornada until it was necessary to secure a new director. Forsling was the logical man to fill this place, and he became Director in 1917. Following the resignation of Jas. T. Jardine, a vacancy was created in the Washington office, and again Forsling seemed to be the proper selection for this position.

Forsling's selection as Director of the Great Basin Experiment Station will keep up the good work already done at that Station and push it forward rapidly.

The Department of Agriculture Post of Veterans of Foreign Wars will hold memorial services for the 67 workers in the Department of Agriculture who lost their lives in the World War. Nineteen of these men were members of the Forest Service. The services will be held in Epiphany Chapel on May 28 at 8 o'clock.

Assistant Forester Will C. Barnes has left for Albuquerque. He will accompany Col. Greeley on an inspection of the Tonto, Sitgreaves, Tusayan, and Coconino Forests. Mr. Barnes will also visit Districts 1, 2 and 6.

Washington Notes (Cont.)

Twenty-five thousand District of Columbia school children have this spring learned the important part which trees and forests play in the welfare of our nation. This was accomplished through a forestry exhibit featured by the Forest Service.

The exhibit was composed of 18 models in five sections which showed in miniature the influence of forests on waterflow, the effects of good and bad lumbering, the many commercial and recreational resources of the National Forests, fire prevention, the varied uses of different wood products, and the importance of forests to agriculture. Large panels of colored photographs were also used to illustrate other important forestry activities. Each model was demonstrated to the students by local forest officers and teachers under the direction of Mrs. D. S. Edgerton of the Branch of Public Relations.

One of the exhibit features of special interest to the boys and girls was the six-foot erosion model, by means of which was demonstrated the beneficial effects of forests on streamflow and in preventing erosion. One-half of the model consisted of a densely wooded hill, with a prosperous farm in the valley near a lake of clear water fed from the forest. The other half showed a barren hillside on which the forest had been cut and burned and from which a silt-laden stream ran past a deserted farm into a muddy lake. A fine spray of water representing rain was kept playing constantly on both hillsides and added realism to the scene.

FOREST PRODUCTS LABORATORY

Muchas Gracias! Completing a six-weeks' intensive study of the testing methods pursued in the Section of Timber Mechanics, Mr. Gustav Winberg, a member of the Swedish Academy of Industrial and Scientific Research, said: "The system of having trained men on definite problems is what makes possible so varied an output. I have been at the laboratory six weeks and have had time to look carefully into only one-seventh of its activities. These men of the laboratory are all anxious and competent to give the questioner on wood utilization complete information. As the only institution of its kind, with the quality of its research known and available abroad, the Forest Products Laboratory must be regarded as an international institution."

Western Kiln Drying Series Over: Returning to Madison May 15 after an absence of over three months, the kiln-drying crew that gave the series of courses at western mills began preparing for the June course at the laboratory. On this extended "field trip," five courses were given in three states to 77 men from the plants of more than fifty big lumber producers.

Make Mill Scale Study: Benson, Volkert, and Wollin of Industrial Investigations have just returned from a ten-day mill scale study which they made at Cloquet, Minnesota. The study was made on a run of birch being cut to small turning stock for the purpose of determining the possibility of utilization of this inferior species in connection with general logging operations in northern Minnesota. While Madison was sweltering last week the northern part of Minnesota was in the midst of semi-winter weather.

Want to Bleach Lard Barrels: Swift and Company are seeking a bleach to brighten up and renew the youthful bloom of second-hand lard barrels to refit them for further use. At present they are resorting to washing the barrels in a washing machine, which process would be continued in any event, and next "shaving" the outside of the barrel by removing a thin layer of wood in a barrel lathe. The laboratory has done little in studying wood bleaches and as far as we know, little wood bleaching is done commercially.

DISTRICT 1 - NORTHERN DISTRICT

The District Improvement Program for the coming season provides for the construction of about 700 miles of telephone lines. The present mileage of lines in the District is 5,700 miles. It is expected that approximately 1400 miles of trails will be constructed in the development of Forest territory during the year.

The 10 Per cent Fund in the District will hereafter be under control of Supervisors, and the money available from the receipts of each Forest will constitute a fund which the Supervisor can depend on for minor construction and road betterment within his Forest. Construction and betterment projects have been approved at the allotment conferences and Supervisors will be able to make plans ahead for using the 10 Per Cent fund, the amount of which they are able to anticipate from a knowledge of the receipts from their Forests. It is perhaps hardly necessary to say that this policy was unanimously and enthusiastically approved at the Supervisors' Meeting in January.

Telephone Engineer Adams has during the past two years given instruction in telephony - construction, maintenance, etc. - to 211 Forest officers at thirteen telephone conferences.

51,000 M Feet of Timber has been salvaged from the areas of the 1919 fires on the Coeur d'Alene Forest.

This timber was sold in seventeen separate sales, ten of which have been closed. The amount received for this fire-damaged timber is $166,300, or at the rate of $3.30 per M feet. The price received for white pine averaged $4.53 per M, and for mixed $1.41.

All chances offered for sale have been sold, and only a comparatively small amount of scattered timber belonging to the Government will be lost.

Ranger Bill Says:

I don't know of any poorer advertisement than a feller who's half-hearted 'bout his job.

The boys' pants is getting terrible ragged since they quit using cloth fire signs, says my wife.

'Pears like I'll have to be "permanently disabled" 'fore I ever get a chance to ride in a taxi at Govt. expense.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

A Fantasy on Fire: Denver folks were favored with the presentation of a striking little fantasy during Music Week - It is called "The Awakening" and is the work of Mr. Edgar C. MacMechan, Editor of Denver's Municipal Facts. The theme is as follows:

> General Public, a man from the city, wanders into a mountain forest in search of rest, where he meets the spirit of Out Doors, symbolized by a girl. Blind to the spiritual side of nature, his first impulse is to destroy. Out Doors pleads with him to help protect the Woods Folk from injury. The picnickers, Carelessness, Thoughtlessness, Selfishness, Vandalism, Destruction and Contamination, set fire to the forest. The shock awakens General Public, who then understands. Through their direction he rescues Out Doors and dedicates his life to nature preservation.

Much enthusiasm was shown at the two performances, and more than 10,000 people witnessed it. The character "Protection" was dressed in a Forest Service uniform and Forest Service signs were destroyed by the picnickers.

Mr. MacMechan is at work on an elaboration of the theme.

The Districts might be interested in the possibility of securing "The Awakening" for presentation, since it carries very strongly the Service message of Care with Fire.

Atavism on Arbor Day: At the North Platte Experiment Station in Nebraska, the planting is done by the State and the Forest Service in cooperation. Visiting the Station on Arbor Day, Forest Examiner Johnson found a school teacher and her flock coming from an outing, each carrying a young conifer. Knowing, as he does, the exact number of trees in Nebraska and that a single tree would be sorely missed, Johnson investigated and learned that the children, led by their teacher, had pulled or cut them from the planted area and were going to replant them. Eighteen trees were thus extracted, ranging in size from 1 to 4 feet. The incident is to be used in educational work in that region.

Road and Trail Money Helps in Grazing Development: A review of the District from the standpoint of grazing projects in connection with the Forest Road and Trail Development Fund discloses that we will be able to take advantage of the fund for these projects up to the amount of approximately $6,000. There is also need for a fund which could be applied to fence, water development, poison eradication, and similar projects, which constitute by far the majority in need of attention in the District.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Bold Coyote: The following story is furnished by Ranger McDuffie and can be vouched for by the five other people present and concerned:

"I heard a dog bark, and upon looking out of a window, saw a coyote coming down the trail toward the open yard space between the Santa Rita Range Reserve headquarters house and Wm. Nicholson's house. The dog, a large mongrel, was afraid of the coyote and retreated as it advanced. I grabbed a rifle and hurried out. By the time I reached the gate on the trail, the other dogs had come to the assistance of the first one, and Tip, a big white shepherd of Nicholson's, had the coyote by the throat and had been bitten by it on the nose just below the eye. I put a Springfield bullet through the coyote's head and stopped further combat. By this time everybody on the place was present. Nicholson told me that as the family sat at breakfast they heard a noise at one of the windows, which swing inward and are practically even with the ground. At the noise they all looked up and saw a coyote bump the window twice with its head. The window opened, the coyote stood looking into the room for a moment and then backed away. There were five dogs about the house and part of them chased the coyote. It ran but a short distance from the house and then turned back toward it. The fight and finish took place less than 50 yards from the house. We are all at a loss to explain such behavior. The coyote's carcass was burned, and as a matter of precaution, the dog that was bitten is being closely watched for symptoms of rabies."

Control of Smelter Smoke Poison: Rumor has it, and the rumor seems fairly well established, that the United Verde Copper Company is equipping the Clarkdale Smelter with devices to eliminate the poisonous gases from the smelter smoke. The cost, it is said, will be about two million dollars. The successful working of such a process should put a stop to the alleged damage to vegetation in the Verde Valley and the Prescott and Coconino Forests. It is claimed that this damage extends for a number of miles in every direction from the smelters.

Talbot's New Book: Grazing Examiner M. W. Talbot has just completed a very practical and workable handbook entitled "Grama, Bunch Grass and Buckbrush." This little volume, the first of a series promised, makes a radical departure from the usual botanical manual in a number of ways. It is prepared in very simple language. Description, distribution and discussion appear on the left-hand page, with original photographs of the plant opposite that illustrate with exceptional clearness the outstanding features. Throughout, the work is unique and well executed.

That International Fire Question: Last week the Coronado was seriously threatened by another fire in the Jarilla Mountains in Sonora, Mexico, that strove to achieve dangerous proportions. A heavy wind pushed the flames northward with great rapidity. Urging and agitation finally got the Mexican Governor to take action, with the result that, principally through the work of settlers, the fire was suppressed before it crossed the line. After numerous unsuccessful attempts, permission has finally been received from the Mexican officials to cross the line into Sonora to fight, on the Mexican side, fires which may endanger our forests.

DISTRICT 5 - CALIFORNIA DISTRICT

From the Klamath: The following is a copy of a letter received recently from one of the Klamath telephone cooperators, who evidently is not very favorably impressed with the suggestion that he part with eight "iron men" in order that Uncle can call on him in emergencies to help suppress fire.

"To the forestry service Klamath Reserve. - first Ve are taxed zwi fur grazing permit second Ve ust to get Wood fur cooking now ve pay Now You vant to sok us when ve use the telephone for your benefit. Nudding didding come and get it."

Stanislaus Attractions Overcome Loyalty to the Sierra - It's funny how even the Service dogs resent transfers and uprootings from their old haunts - and then decide that the D.O. knows best after all. Claude Barker, after fourteen years of Sierra training, friendship and the prized esprit de corps, was slated for transfer to the Stanislaus. This, of course, meant that his puppy "Bob" would also have to move, and it was taken for granted that he would have no serious objections so long as his meals appeared at the customary intervals. After Mr. Barker had been at his new location about 24 hours Bob did not report for plate duty. Several days failed to throw any light on his disappearance, much to the worry of his doting master. Toward the end of the third day the most woebegone, sore-footed, bedraggled, meek looking canine appeared at the door of the Supervisor's residence too disheartened to even apologize. Somehow it seemed symbolical of the feelings of all when, after years at one post, we are called upon to go elsewhere - after a few days of harking back to our old haunts we decide that a little broadening can't hurt any of us and we can't get it by traveling the same road forever. -- Bob's sporting a brand new smile which says "Tisn't so bad after all."

A Worth While System: At a recent meeting the Jackass Community Association found they had a balance of a little more than $200 after settling all outstanding bills incurred during the past season. Thirteen hundred head of cattle were carried on the allotment this season, an increase of about 250 head over the number carried in 1920. From the assessment of $2 per head levied at the beginning of this season, the grazing fee of 54¢ was paid; 8 pounds of salt per head and necessary horse feed used on the fall roundup and driving out, were purchased; two new holding pastures of about 40 acres each and 40 Class A salt logs were constructed; wages of two range riders at $125 per month for season June 15 to September 10, and all subsistence expense of men while on pasture fence maintenance and fall roundup were paid. It is felt that this venture has proved very satisfactory, both to the Forest Service and to the 18 permittees represented in the Association.

Preliminary steps are now being taken to interest the permittees of some of our other allotments applicable to this system in the formation of another community association.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Sales Data: Statistical reports for the calendar year 1921 just compiled show the following figures for the timber business of the District. Total amount of timber sold in Oregon, 139,871 M feet valued at $385,508; in Washington, 50,316 M valued at $81,840; total, 190,187 M valued at $467,348. The Crater Forest leads with a total of 84,646 M feet sold. The total amount of timber cut in Oregon was 137,054 M; in Washington, 78,102 M; total, 215,156. Crater leads also in the amount of timber cut with 33,127 M, and the Whitman is second with 28,580 M. A total of 6,858 M feet was issued under free use permits, valued at $5,556.

She's A Good Scout: Miss Minnie F. Hennen, clerk on the Malheur, holds the unique position of Junior Scout Master in John Day. As a reward for attendance at regular weekly meetings she will give each ambitious youngster a copy of "The Ambitious Tree," by E. T. Allen, during Forest Protection Week.

Why Not Others? Forest Supervisor Macduff, of the Cascade Forest, through cooperation with sporting goods stores in Eugene, has been able to get fire prevention data printed on 2000 one-quarter inch scale maps of the Cascade Forest for public distribution, without cost to the Forest Service.

Law Enforcement on the Cascade against leaving campfires burning has been about 95% during 1921. Very satisfactory publicity has been secured in every case. A mistake was made in two cases in suppressing names. The most valuable part of the publicity from arresting and fining a man for leaving his campfire burning is lost if his name does not appear in the paper. Another point brought out by the past year's experience in this work is that quick action is what counts. If a forest officer discovers a campfire burning and can confront the suspect immediately and take him before a justice, the usual result is a plea of guilty even though a jury is not available or has not been worked up. Delaying to get instructions from supervisor's office or to work up report and chain of evidence results in a much harder case to get results on.

DISTRICT 7 - EASTERN DISTRICT

Greater Effectiveness in Fire Protection along the south boundary of the Arkansas Forest is promised by an agreement which is being perfected by Supervisor Plymale with the Dierks Lumber Company, owners of large holdings adjacent to the Forest. The Company is furnishing the material for a new lookout tower on an excellent lookout peak, is posting its lands with signs like those in use by the Service, and is pledging its full cooperation to the local Forest organization in fire protection.

A Verdict of Guilty was rendered by a jury in the Federal Court at Knoxville, on March 2, 1922, against General Hooper, of Epperson, Tennessee, who, on March 2, 1921, had set out a string of fires on the Cherokee. Hooper's Attorney filed a motion for a new trial. The motion was overruled, and on May 6, Mr. Hooper was sentenced to pay a fine of $250 and costs, and to spend a month in the McMinn County jail.

Forest Examiner M. A. Mattoon of the Pisgah has recently been doing some effective work with the Boy Scouts of Asheville, N. C. He has instructed them in mapmaking, mapreading, and identification of local species. Asheville is building up a strong Boy Scout organization, and the opportunity open to the Pisgah force for educational work among these boys is growing larger all the time.

Col. A. E. Williams, Q. M. C., has recently been designated by the Secretary of War to confer directly and informally with District Forester F. W. Reed, similarly designated by the Secretary of Agriculture, on the possibilities of future administration by the Forest Service of forest lands embraced within numerous Military Reservations in the East and South. Many of these reservations were withdrawn or otherwise acquired by the War Department in connection with the expansion necessitated by the World War, and the Department now finds them no longer needed.

DISTRICT 8 - ALASKA DISTRICT

What Roads Mean to Alaskan Towns. In advocating the extension of roadbuilding in the vicinity of Seward, City Councilman Ellsworth of that town has submitted to the Forest Service some interesting statistics showing the extent to which the town of Seward is making use of the government road extending from the town to Mile 12 of the government railroad.

According to Mr. Ellsworth, there are eight cars using this road, principally for the carrying of tourists and sightseers. Taking his own car as a sample, Mr. Ellsworth states that the car made a total of 287 trips last summer over this road, carrying an average of four passengers to the trip, or a total of 1148 passengers, and a total mileage of 4,600 miles. That is for one car only. Multiply the figures by eight and you have a fair idea of what this short strip of roadway--12 miles--means to Seward.

A similar road is under construction from Cordova to the Radio Station, seven miles distant, circling the shores of Eyak. For grandeur of scenery this route cannot be surpassed anywhere in the Territory for the same distance. It will give Cordova something worth while to show to tourists while boats are in port; it will mean more cars in the town; it will mean a constant revenue from the tourist traffic; it will mean that the people of Cordova can take an outing without hiring a boat or walking the ties; and last but not least, it will provide an easy means of getting cordwood into town. The road now extends less than three miles from town, and last fall more than 100 cords of wood came in over it. L. C. Pratt.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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PUTTING "FORCE" INTO LAW ENFORCEMENT

By
C. V. Brereton, D-5

Since Law Enforcement seems of late to be occupying considerable space in our news letter and bulletins, I feel constrained to join the ranks of writers on this subject. After four years of actual work on the job itself, I have formed impressions and opinions that will require something more than well-written arguments to change.

Before deciding to burst into print on this subject I have read with keen interest every article that has appeared in Service publications, and the thought occurs to me that Law Enforcement, instead of being considered as a recognized activity of the Service, whose technique must be learned as any other jobs must be learned, is being used to a large extent merely as a basis for argument.

How many of those who have written of this work really know what Law Enforcement, in his first experience of it, means to the man on the ground - the man who really does the job?

The Service has heretofore recognized in all its branches that training is necessary to make a thoroughly experienced, reliable officer out of the new applicant. Grazing takes few chances on the reports of inexperienced men, Forest Management watches the new scaler or timber-sale man with careful scrutiny until the results he secures shows his ability to work out his own most intricate problems. Yet an entire force may be given a few perfunctory "Arson Squad" conferences, furnished with Manuals, and told to "go get 'em." Then because individuals or districts or whole Forests fall down in the season's work on Law Enforcement, the complaint is made that Law Enforcement won't work under certain peculiar local conditions.

The answer is simply that Law Enforcement will work where each member of the Forest force, from the Supervisor down, gets down to business and makes a real effort to see that it does work. There are too many Forests in District 5, that, prior to 1918, were infested with the worst type of incendiary - the money-making kind - whose Supervisors now "point with pride" to their entire freedom from incendiarism and the astonishing reduction in the number of their man-caused fires. And the best of it is that officers on those Forests have just as many, if not more, friends among their Forest users. They have the unqualified respect of their communities and are receiving more and heartier cooperation every day.

Now, as to the best way to go about it. There have been many reams of paper used in outlining the most approved methods of catching and taming fire bugs, and it is doubtful if any stuff could be written now that would have much value as instructions.

I want to take exception, however, to some of the statements and arguments that have appeared regarding methods of going about the work. These arguments are undoubtedly an excellent means of bringing out the best thoughts of supervisory officers, but it seems to me that their diversity is apt to be extremely confusing to a man who is undergoing Law

Enforcement training. Further, he would not be human if he did not lean toward a view of the policy that would relieve him of a lot of hard work as well as an onerous, unpleasant duty.

A criticism of secret investigations which implies that the successful Law Enforcement officer is a sort of comedy detective, moving with muffled footsteps among the unsuspecting populace, is unjustified. Such a criticism seems to show a lack of knowledge of the work itself, for it is nothing more than good business to keep the facts of any investigation as quiet as possible, not only on account of the legal aspects of the case, but also because, should the case turn out to be a "bloomer" the feelings of innocent parties are not hurt.

I do not like to see either the growth of the idea that, in order to put Law Enforcement over successfully, we must spend a large part of our time in "establishing friendly relations" with District Attorneys, Justices of the Peace, etc. I am not speaking against friendly cooperation nor the use of business courtesy in our dealings with county officers, but I believe there is too great a tendency to forget that in Law Enforcement we have a job to do, the rules of which are laid down by our own Manuals. We are U. S. officers, and the dignity attached to the job on which we are working will be just what we make it.

District Attorneys are, as a rule, busy men. They have investigative work to do in their own counties and are unwilling to burden their offices with more work. We owe them no obligations, and there are very few attorneys who will not take up one of our cases if it is properly worked up and intelligently presented. If the county authorities will not take up a case, it is up to us to prepare a better one or drop the investigation.

In so far as judges are concerned, it seems to me that ethics alone would bar us from approaching them regarding a case we wish to present. Further, we should avoid going on record as thanking judges for decisions they have rendered. They have administered the law according as the merits of the case appealed to them, and it savors strongly of undue influence when flattering comments on the decision are made by Forest officers.

In conclusion, I wish to say that I firmly believe there is too much discussion as to the whys and wherefores of Law Enforcement, and too little real, cold-blodded effort to make it a success. We know what the laws are now, and we know the approved method of enforcing them.

Subway Trains vs. Pack Trains

By A. H. Carhart, D-2

Rome became "civilized" - and fell to pieces.

Athens attained similar refinement and did likewise.

Egypt vaunted a civilization that was highly organized and it disappeared.

The Maya civilization of Central America advanced to a place beyond that attained by Egypt and we are now unearthing prehistoric cities of that nation. There is no trace of their "civilization" remaining except their structures. The people have disappeared.

Babylon busted!

And the United States is becoming flapperized!!!

All of these civilizations of the past became so highly organized they became brittle. They reached a refinement that surrounded the people with too much of the artificial. To put it bluntly, they had too much poulette en casserole and demi-tasse and not enough sow belly and beans.

Man is a creature of the outdoors. He lived in it many, many centuries before the first town election in Babylon. From it he came to make Babylon famous. But when he came he brought the rugged physique of the open places. He tore into it and built a fine city. As each generation of city-bred Babylonians came along they became softer. They couldn't keep up to the outdoor standards of mind, soul and body because they were city bred. Their standards became artificial. Their race became "brittle." It shattered.

It smashed because the people were living under the artificial conditions of city life and its artificial standards. They lost touch with outdoor life.

About the same thing happened in the other "civilizations" cited. They became too artificial. When they lost touch with the outdoors they went to pieces!

The United States of America is to-day hurtling towards overorganization, brittle artificiality, faster than any of these nations of old because we move faster. Several centuries hence, when we have said "Howdy, St. Peter" a long time since, this grand old republic of ours will crack and splinter -- unless ------

Can we keep our people in touch with the purifying life of the great open places? Can we play the pack train against the subway express? Can we strike a balance between outdoor life and city life that will keep our people strong and virile? If the Unite States of America is going to be a different thing than Babylon, Athens, Rome, or Egypt, we have got to get our people outdoors.

There is no halfway point - we've got to do it!

This is perhaps the greatest service to the Nation that the Forests can perform. For what good will lumber, cattle, irrigation, water power, or mining be if we become an extinct or servile nation?

The Forests offer the one greatest dose of medicine for cityitis that we have. Their very expanse of outdoor territory is their greatest asset for curing "too much roof."

We can not minimize forest recreation. It may be the very thing that will eventually save the nation from the lounge lizards.

Aint it a grand and glorious feeling, this saving your country?

But, seriously, think it over.

"Veni, Vidi, Vici"

Gifford Pinchot,
Milford, Pike Co., Pa.

The Society of American Foresters watched with pride your splendid fight. It rejoices that foresters' ideals of public service which you inspired in our profession will now find a wider application in the affairs of a great state.

SHERMAN,
President.

Dear Sherman:

I am sincerely sorry for my delay in answering your telegram, but with a thousand telegrams and two thousand letters in the first week I have been unable to get at it. I am taking, however, this first chance to thank you both for what your telegram said and for the way you said it and to ask you to give my warm regards to the members of the Society. No matter what else I may be I will be a forester until the last day of my life.

Yours as always,
G. P.

District Seven's Fire Problem

By E. W. Kelley

Throughout the western districts I have often been asked about the fire control job in District Seven.

What is it? The following tabulation will answer the question as far as volume of business is concerned.

At the time the western districts are safe under from one to thirty feet of snow, the season in the eastern group of Forests of District Seven opens in earnest in January and peaks about March 1. By May 1 the serious period has passed, but fires occur intermittently throughout the entire year. The guard force is employed for an average season of four and a half months duration; however, the period of employment is not continuous. Guards are called to serve as "fire weather" is anticipated or as it occurs.

The Alabama Forest will burn, according to statistics, at any time after three days sunshine, while the Florida needs but three hours of Old Sol's attention after a rain to put it in shape for bad fires. It snowed on the Florida once in 1889, from which occurrence all subsequent events take their date. Guards are off and on duty there during the year as evidence of climatic conditions favorable to burning is detected.

The situation in Arkansas consists of a huge incendiary element and weather conditions throughout most of the year which bring success to the efforts of the firebug. One hundred and eleven incendiary fires have occurred on the Arkansas Forest since January 1, 1922.

Number of Fires by Causes

Year	Rail-roads	Incen-diary	Brush burning	Campers	Lumber-ing	Miscel-laneous	Total man-caused	Light-ning	Total	Fire trespass casas
1914	319	84	175	45	8	98	729	11	740	11
1915	164	147	304	62	36	124	835	21	856	9
1916	164	219	160	48	102	361	1,054	8	1,062	14
1917	150	246	173	56	37	271	933	8	941	7
1918	95	66	58	30	2	152	405	1	406	9
1919	61	72	29	21	31	172	386	3	389	1
1920	85	117	27	25	43	181	478	6	484	6
1921	42	221	45	67	20	300	695	7	702	26

Kilh Dryers Take to the Woods

By E. V. Jotter, Madison Lab.

"I never realized just how much water green lumber does hold," said a lumberman at one of the western kiln-drying courses when he and others in the class had figured a loss of 28 tons of water from 35,000 feet of lumber.

It was with the idea of getting to the industry, in the most effective manner, the results of the years of research in kiln drying at the Forest Products Laboratory that these courses were started. Tons of literature can be sent out, but an ounce of "show-how" is worth a pound of "read-how." Besides, there is also the stimulating effect on the Laboratory men of fresh contacts with the kiln dryers and their problems, as well as the opportunity to observe the improvements in kiln drying developed at various commercial plants.

A still further advance in getting this information to the user most effectively was made when the entire course - instructors, three huge boxes of recording thermometers, pressure-reading valves, motors, and other instruments, with some hundreds of pounds of literature, started for the West Coast woods last February for a three-months' trip. First at Susanville and Eureka, Calif., then on to Everett, Wash., Gibbs, Idaho, and finally to Hoquiam, Wash. The courses were attended by 74 men, representatives of leading lumber concerns.

With the exception of the Service representatives and some others under special arrangement, each one attending the course of two weeks paid $150 tuition. It is estimated that the total receipts very closely approximate the Government's share of the cost of giving this instruction. These courses, like all other projects in which the Laboratory is of particular help to some one industry or individual, are termed cooperative, and are paid for by the cooperator.

Figures submitted by operators who have put in effect the information acquired have reported savings of 10¢ to $2 per thousand in reducing losses due to degrade, use of excessive heat, too long a time in the kiln, and so on. At 10 cents a thousand the saving to these western firms could be $100,000.

Just what is in these courses? Briefly, they attempt to show how drying in wood takes place, what conditions are most favorable to rapid, safe drying, and how to regulate the kiln. Within certain limits, the Laboratory believes that not so much depends on the type of kiln as on the care and knowledge of the operator. Among the subjects discussed are the following:

Shrinking, warping, and checking of lumber.
Casehardening, honeycombing, and collapse.
Correct drying schedules for hardwoods and softwoods.
Principles on which various dry kilns work.
Identification of common woods.
Care of lumber in storage.

The 274 men who have attended the various courses in the West came from 28 States and three foreign countries. A large number of men, however, is not particularly desired, as one of the particular advantages of the course is the opportunity for individual instruction and personal consideration of the problems of each firm. During the recent courses, runs were made on sugar, white, and western yellow pine, Douglas fir, redwood, western hemlock, and western larch.

The success of the course must largely be credited to the local District Products Offices and the thoroughness with which laboratory research had already been sold to the lumber industry by western Forest officers generally.

WHAT SAY?

The Ayes Have It

By Will C. Barnes

My own experience covers but one instance in which a mountain lion uttered some of the most piercing, awe-inspiring screams that I have ever listened to, except from some of our alley cats here in Washington. The mountain lion is, of course, the puma, known officially as "felis concolor" or "felis cougar." He is nothing but a great big cat, and why any man who has ever listened to the screams, howls and wails of the ordinary alley cat, especially of the Thomas variety, should doubt that his older and larger relative, the puma or mountain lion, does not indulge in the same sort of vocal atrocities, I am unable to state. In other words, I am thoroughly convinced that the mountain lion does emit screams or cries or howls, or whatever you choose to call them, exactly as does the alley cat and for probably the same general causes. In looking for authority on this subject, I went at once to the person whose observations as to the habits of wild animals in America are probably the most widely respected of any of our present authorities. This is Mr. E. W. Nelson, present chief of the Biological Survey. (Nelson, by the way, was once a cowman on the same Arizona ranges with myself and Potter.) In his wonderfully interesting discussion of "The Larger North American Mammals," published originally in the National Geographic Magazine for November, 1916, I find under the head of "mountain lion (Felis cougar)," the following statement: "It has a wild screaming cry which is thrillingly impressive.***** In the mountains of Arizona one summer a mountain lion rapidly passed along a series of ridges high above my cabin at dusk, uttering this loud wierd cry popularly supposed to resemble the screams of a terrified woman." As far as I am concerned, this is enough for me. The mountain lions do howl. (This ends the mountain lion controversy.--Ed.)

Delinquent Grazing Fees

Following is a record of 1921 delinquent grazing fees, as of date April 30, 1922:

District	No. Delinquent	Amount
1	75	$4,555.71
2	144	12,973.85
3	323	80,334.26
4	386	21,182.16
5	13	1,197.57
6	93	6,210.74
Totals	1,034	$126,454.29

C.E.R.

****

The Complete Reporter

Reporter: I have come to interview you, sir.

Forest Supervisor: Well, go back and write your interview and let me see it.

Reporter: Here it is.

Game Objectives

What is the National Forest's objective in game production?

What values in trophies, meat and fur will your District and your Forest produce?

As early as 1870 deer were practically cleaned out of Vermont. In 1875 thirteen white-tailed deer, comprising six bucks and seven does, were procured by a number of sportsmen of Rutland, Vermont, and liberated in the forests adjoining that city. For twenty-three years none were killed, except a few that were illegally shot. They increased in numbers and were sufficiently abundant by 1897 to permit the establishment of an open season, when 150 were shot. Their increase in subsequent years is indicated by the following figures: in 1901, 211 were killed; in 1902, 561 were killed; in 1905, 791 were killed; in 1907, 1,600 were killed; in 1908, 2,208 were killed, and in 1909, the grand total was 5,261.

Is your game stock so depleted that you must wait fifteen or twenty years for it to come back? This game is a product of the lands you are administering. There are many cases where the virility of the increasing game, under closed seasons and partial protection, would be greatly advanced by adding a few animals. In every case the money to defray the cost of securing animals for such a plant can be easily secured from local sportsmen. You who have animals in such numbers that you could exchange a shipment for planting in another Forest, can you handle what you have? The need of plant material has been urgent for several years and the forests are producing game as a product. What would you think of a stockman who produced stock and could not gather the animals for shipment. The State of Pennsylvania has an item of expenditure in the 1920 activities of $56,000 for plant material. The size of this item was not controlled by what the administration thought should be expended for this purpose, but by the material that was available to draw from in the United States, Canada and Mexico.--Smith Riley.

Stretching the Dollar

Heroic efforts are apparently being made by the Director of the Budget to stretch the purchasing power of the present day dollar. This is apart from the program for economy and curtailment of expenditure by cutting down the activities.

The newest activity of the Director of the Budget is to publish lists setting forth hotels that are prepared to furnish accommodations to Government employees at a reduction of 25 per cent from the established prices. The circular does not indicate whether the traveler must prove his identity on registering or whether there is time for this at the time of checking out. If the former, there is the usual danger of getting the accommodation on the basis of the reduced price and not getting the full 100 per cent value.

Of particular interest is the third paragraph. The stated rates range from $6 per day down for room only. The $5 top limit for employees of the Government seems to preclude full enjoyment of the invitations of the hotels willing to make a 25 per cent reduction.

The hotels granting this reduction are as follows:

Waldorf Astoria, New York
McAlpin do.
Martinique "
Claridge "
Woodstock "
Bellevue-Stratford, Philadelphia
Hotel Holley, Washington Square West, New York
" Earle " " North " "
" Judson " " South " "
" Albert, 42 East 11th Street, New York
" Irving, 26 Gramercy Park South do.
Berkeley 20 Fifth Avenue "
Hotel Le Marquis, 22 East 31st Street "
" Wellington, 55th St. & 7th Ave. "
" Van Rensselaer, Fifth Ave. & 11th St., New York
" Chelsea, 23rd St. & Seventh Ave., New York
Kew Gardens Inn, Kew Gardens, L. I.
Hotel Wauregan, Norwich, Conn.
" Crocker, New London, Conn.

P.D.K.

By J. C. Roak, Kaibab

Much interested in reading Redington's article in the Service Bulletin of May 8, particularly the last paragraph. I do not like to question one so widely traveled in the Forest Service, but can not let anybody get by with the statement made in the last paragraph.

On the Kaibab there are at least six places where 1,000 head of deer can be counted in one day during the winter. Three hundred head of deer in a bunch is so common as to escape unnoticed. In the summer in VT Park from the Z ranch house I have personally counted 231 head of deer all on less than 10 acres of ground, and 56 of them on a salt lick in front of the house, close enough so that any one could have been hit with a stone, and on several occasions have ridden through VT Park when there were 500 or more deer in the park. This was not winter, if you please, but in August.

We wonder in regard to the 35 to 40,000 estimate. This doubles the highest guess on our deer, and we particularly wonder if in the vicinity of the 40,000 deer there are six places, all widely separated, where 1,000 head of deer can be counted in a day.

WASHINGTON NOTES

Dr. Claude P. Fordyce, the noted author, mountaineer and sportsman, will tour a number of the western National Forests this summer in order to secure material for a series of articles on our national playgrounds now running in Outers'-Recreation. Dr. Fordyce expects to visit the Kaibab, Powell-Sevier, Angeles, and other Forests, where local officers will cooperate to make his trip a success.

Mr. Raphael Zon has been appointed by the Secretary to succeed Assistant Forester E. E. Carter on the Department Committee on Land Utilization.

How to Write Bulletin Articles: Frame up your story roughly on the typewriter - say about 800 words. Throw at least half of it into the waste paper basket. Cut the remainder down two-thirds and send it in.

Write as you would talk. Forget all the big words you know, don't "preach," and steer clear of cheap humor - they are still giving away almanacs at the drug stores.

You will then have a story which you will think is "not worth a darn," but which most everybody will read and enjoy.--H.

An "Irish Bull" in the Service. (Extract from an official document, signed by a Supervisor and approved by a District Forester. Names of States changed.)

"The agricultural developments in Missouri adjacent to this part of the Forest is practically nil, and consists of only a few settlements in Iowa."

Bleecker L. Wheeler, formerly of D-4 and the Washington office, has announced his resignation as Chief Engineer of the Amortization Section, U. S. Internal Revenue Bureau, and connection with the staff of Ford, Bacon and Davis, Inc., Engineers, 115 Broadway, New York City.

District News Clippings are being sent in in bales to PR. Much of this stuff is worthless from a Washington point of view and is not read. What is wanted is a select list of important District news items, sent in weekly, for the information of the various Branch Chiefs.--Ed.

FOREST PRODUCTS LABORATORY

District Foresters at Laboratory: Plans for the coming year, including selection of projects for the research program, were the objects of a series of conferences held at the Laboratory during the entire week of May 8 to 13. The coordination of the work with the National Forest program was not overlooked in this connection, as representatives of the western districts helped pass on the program as evolved. District Foresters Peck and Cecil, from Denver and Portland, respectively, were in attendance, as well as S. V. Fullaway, in charge of Products at Missoula. From Washington, Assistant Forester Clapp, and Ward Shepard of the Research Branch attended the conference.

Golf Head Bleaching Study. Derived Products is making a brief study for the A. G. Spalding and Brothers Company of the bleaching of golf club heads of persimmon wood. The company has nearly twenty thousand heads in stock, all of which are much mottled in color ranging between yellow and light chocolate shades. One sample was successfully bleached white and the company has sent a dozen more heads for trial.

Busting Bomb Boxes. That is, a few were broken up in finding the best type to carry successfully the Navy 300-pound V. B. Demolition bomb that was carried inside the wooden case. Seven types of crates were tried in the experiment and the crate finally evolved will also be used to carry the 1,300-pound bombs of the same type.

Another Laboratory Book. This new book contains no word mentioning the Laboratory, nor for that matter any other laboratory, place or individual. It is a book and yet devoid of printing, a bound volume of limited edition - just one copy. It is a book of paper samples representing all papers made here, from the beginning of 1918 to March 1, 1922. This de lux, handmade copy has sheets of many colors, weights and textures, and represents more than 125 American species of wood from which paper has been made.

DISTRICT 1 - NORTHERN DISTRICT

Camp Fire Permit. For the first time in the history of District One it is proposed to use the camp fire permit as a means of fire protection. The area on which it is planned to place the restriction is the lower part of the Sun River District on the Lewis and Clark National Forest. Three times, in as many years has this locality been visited by disastrous fires ascribed to careless campers. The area is one of intensive use, harboring as it does the reservoir and other improvements of a large reclamation project, a summer hotel, a hunting lodge, a hot springs, several summer cottages, winter elk range, many week-end campers from the city of Great Falls, and a ranger station.--H.R.F.

Telephone Engineer R. B. Adams and Logging Engineer J. W. Girard have been asked to give a talk before the Pacific Logging Congress next fall on the use of radio equipment in fire protection and on the lack of profit in the cutting of small trees.

Superintendent Albright of Yellowstone Park states that he recently rode over the winter elk range north of Yellowstone and found the game in a very satisfactory condition with practically no winter loss.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Timber Sale in Black Hills. A sale of approximately 4½ million feet of western yellow pine sawtimber within the Upper South Box Elder unit on the Black Hills Forest has just been awarded to Brigham & Sons of Whitewood, South Dakota, at $4.05 per thousand feet.

Professor John Ise of the University of Kansas, an authority on forest economics, is going to make a first hand study of National Forest conditions in Districts 1, 2, 4, 5, and 6, starting the last of this month. Professor Ise is a brother of W. J. Ise, Assistant to the Solicitor in this District.

Bus Line Into Jackson Hole. A news story was published on March 29 in the Lander, Wyoming, Evening Post, stating that a company has been organized in Lander for the operation of motor busses to Jackson Hole in the Teton. Although the news article as printed does not state that the new road over Two-Gwo-Tee Pass was built by the Forest Service and that Brooks Lake is in the Washakie National Forest, it is a fact that this bus line has been made possible by the Forest Service. Also there is to be a hotel at Brooks Lake on the Forest for an overnight stop. The Washakie is bound to become a major recreation territory through this action.

State Game Matters. The State Game Commission's Office of Colorado, during the calendar year 1921, issued over 100,000 licenses yielding a total revenue of $144,610.00.

Twenty-four million fish fry were distributed by the State during the year, consisting of rainbow, native and eastern brook trout, bass and ring perch.

During the year 1921 the Department liberated 270 pairs of quail, bob-whites, valley quail and scale or blue quail. An experimental farm is being established on the Denver hatchery grounds for the propagation of game birds.

Ranger Bill Says:

It's a wise dollar that knows its own allotment in June.

My wife says she don't know whether to plant the free Govt. seed she got in the flower bed or the garden.

Every time I think of that Washington bunch kickin' about goin' to work at 8 o'clock, it makes me laugh.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Yellow Pine Beetles About Due For an Outbreak. A recent issue of the Coconino Sun of Flagstaff, Arizona, sounds the alarm which, if it reaches Pine Beetle headquarters, will surely slow up any serious spring offensive that may have been planned.

"Swat the yellow pine beetle! Kill the little cuss, kill him often and kill him dead! The festive house fly is a bad enough animal; but in comparison to the damage that can be done by the yellow pine beetle, the house fly's depredations are those of a piker. Besides, we know the house fly by sight and swat him by instinct; while we could see a million yellow pine beetles without looking into their tracheotomy or plebotomy."

Signs and Forest Service Towns: How shall the merchants of a town that is entirely surrounded by National Forests tell the traveler which is the best department store, grocery, hotel, garage, machine shop, laundry or fruit stand? With the signs along forest highways under the ban and the only avenues of approach passing through National Forests, such an enterprising place as Flagstaff, Arizona, presents a unique problem to the local Supervisor. However, Miller is taking care of the proposition by designating certain areas where advertising signs will be permitted.

Loco and Larkspur. Dr. Eggleston, Assistant Botanist of the Bureau of Plant Industry, is investigating poisonous plants in the National Forests of Arizona and New Mexico. He says that it takes about 450 pounds of loco to loco an animal and that the effect is cumulative in the system. Sixty pounds of larkspur will cause death, but the poison in small amounts is quickly eliminated from the system and is not cumulative. In some regions, insects have destroyed loco, and since many of the pods of the astragalus diphysus are infected with an insect, a quantity has been gathered to be sent to the Bureau of Entomology.--Prescott.

White Deer on the Lincoln. It is the third white deer that has been seen in that part of the country, according to old hunters. A Roswell paper is our source of information and it says that one O. G. Long of the Capitan region swears and declares that recently he saw a white deer. The deer appeared to be normal in every way and departed from the viewer's presence in the getaway time common to deer. The last one known to have been seen down that way is said to have been killed by the late Earnest Wildy some twenty years ago. Reports of "White Mule" at large on some of the forests are not infrequent, but the "White Deer" is certainly something of a curiosity.

Old Old Timer Leaves the Service. The Secretary of Agriculture has accepted the voluntary resignation of Supervisor George H. Barney of the Powell Forest effective May 31.

Mr. Barney has the record of being the only Forest Supervisor left who was a Supervisor prior to the transfer of the Forest Service from the Department of the Interior to the Department of Agriculture. He has been Supervisor longer than any other man in the District, having been appointed Forest Supervisor May 1, 1904, or nearly a year before the creation of the Forest Service.

Sad News. On April 14, George W. Smith died at Hot Lake, Oregon. He was a ranger on the Clayton District of the Challis Forest for nine years, entering the Service in the spring of 1909 and leaving in the spring of 1918 for army service. On his return from the army, he was so broken in health that he was never able to take up his Forest Service work again. His recent death was just as much a sacrifice for his country as if he had fallen in battle, as it was no doubt the result of his army service. George was a good ranger, always looking after his work in an efficient manner and having the respect and confidence of all forest users on his district.--Challis.

Range Appraisal. Even as Hannibal's army marched day after day beneath scorching desert suns, over dizzying heights and glassy glaziers, so they, the privates of Rachford's army trudge on and ever on seeking a goal more remote than the fabled end of the rainbow. Even though the highway be strewn with botanical boulders (Festuca, Agropyron, Calamagrostis, Chamaene angustifolium and e'en Balsamorrhiza sagittata), they labor on and on from sun to sun.

Oh, ye who are lost in the unfathomable depths of range appraisal, ye who beat your breasts and tear your hair, ye who suffer the pangs of self-pity, hearken to the measured beat of the typewriter and think of one who spends the summer hours turning out by the yard the typewritten copies of your reports. The hours will spread into months and still the work will go on even as the locusts that took the grains of corn. Thirty pages per Forest, twenty-nine Forests, 18 x 21 sheets, the chaotic disarrangement of figures clouds her brain as she views her future. Ye who have completed your reports, rejoice for her work has just begun.--Anonymous.

DISTRICT 5 - CALIFORNIA DISTRICT

We Win the Silver Loving Cup. When the prizes for optimism are distributed the large, solid silver loving cup will be presented to officials of the United States Forest Service. No one else in California displays such an abiding faith in human nature.

Each spring they welcome to the National Forests of the State whosoever feels the urge to camp in open country. More than that. They even issue literature urging people to take advantage of the finest natural playgrounds in the world. Their pamphlets set forth the charms of the hills and streams made accessible by Forest Service trails and roads, built with much toil and expense. To insure the comfort of travelers who answer the call, minimize the fire risk and make the forests "fool proof" they clear and equip convenient camp sites.

And after all this work is done, after everything is made easy for the camper and he appears in the forests in abundance, the hard-working hosts spend a pleasant summer fighting several hundred odd fires set by their guests. Yet they welcome the camper just as heartily next season and continue to spend time and money in making the forests comfortable and safe for him on the theory that he won't do it again. That shows a real faith in human nature.--Frederick Wagner, Los Angeles Express.

Some "Barn-Storming" Campaign! During our recent trip in southern California, Fair and I gave illustrated talks to about 2,500 people, mainly high school pupils. Talks were given at the Santa Barbara High School, Santa Barbara Chamber of Commerce, Santa Paula High School, San Diego Academy of Science, Hemet High School, Corona High School, Orange County Union High School and the Santa Ana High School, and informal talks were given at several other gatherings. We have found that people all through this country are right with the Forest Service in fire prevention measures and are much interested in the work of the Forest Service.--L. A. Barrett.

Boulden Makes First Arrest

A few days ago Supervisor Boulden caught a boy named Sam Peddler, of Coronado, in the act of shooting up one of the road direction signs of the Automobile Club of southern California. The boy was arrested for mutilating the sign and taken before Judge Kempley of Coronado. In passing sentence the judge said that the destruction of signs which are placed on highways for the benefit of everyone using the roads is a serious crime and that in so far as his court was concerned more severe action would be taken if the practice of destroying signs was not stopped. Owing to the youth of the accused, he was fined $25.00 in addition to the severe lecture which was given him by the judge. This is the first case in which a Forest Officer has actually caught anyone in the act of mutilating a sign of one of the automobile clubs. Much publicity was given the case in the San Diego papers.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Errors in Scale Books. The yearly summary of the number of errors in the scale books made by each scaler has been compiled from the scale books checked during the calendar year 1921. The record covers 104 books with a total of 419,601 logs scaled by 38 scalers, rangers, lumbermen and forest examiners. The number of errors made was 292, which is almost exactly half the number made last year. The average number of logs scaled per error was 1,436 as against 632 in 1920. Two men, scaling over 1,000 logs each, had no errors in their books - R. J. O'Farrell of the Rainier with 14,530 logs, and S. A. Moore of the Siskiyou with 1,320 logs. The nineteen scalers made less than one error per thousand logs scaled. The average per cent of excellence has advanced from 85 per cent, as shown by last year's report, to 94 per cent in 1921.--F.E.A.

Blister Rust in the N. W. In order to assist in the fight against a possible spread of white pine blister rust in the northwest, the following personnel of the Forest Service was lent to the Bureau of Plant Industry for a short time:

Forest Examiner Walter H. Leve; Rangers R. E. Smith, Stanley Barton, Oregon; Ranger R. M. Filloon, Snoqualmie; Scaler R.J.O'Farrell, Rainier; A. L. Peachey, Crater; N. Leroy Cary.

These men are acting as emergency inspectors until the Blister Rust Control organization is worked out.

The Spoken Word. Forest officers in D-6 have been unusually talkative during the past winter, all it is believed to good effect. Talks, mostly on fire prevention and in connection with Forest Protection Week, have recently been made by the following officers: C. C. Hall, L. L. Hougland, L. B. Pagter, G. E. Griffith (8), W. G. Weigle (3 - one by radio), C. C. Reid, H. S. Albertson (2), E. C. Peachey (3), H. L. Plumb (2), A. H. Sylvester (7), A. G. Jackson (2), R. O. Park, R. L. Campbell, J. D. Guthrie, S. L. Walters (2), Ben Young (2), Albert Wiesendanger (30), R. L. Fromme (15).

Novelist to Write on Forestry. Mr. Joseph Hergesheimer, author of "Java Head," "Three Black Penneys," "Steel," and "Cytherea," recently spent a few days in this District. He was on the Coast securing material for a series of economic articles for the Saturday Evening Post on forests and forestry. By appointment he met with Messrs. Allen, Cecil, Chapman and Guthrie, and the first two took him on a trip to see a lumbering operation.

DISTRICT 7 - EASTERN DISTRICT

"A Big Fire and a very bright Light in the Sky" was the report received from Oswald Bald, lookout on the Cherokee, one evening recently, just as the Deputy Supervisor and the Ranger were preparing to retire after a strenuous day. Sassafras Knob was called but reported no fire to be seen, although Oswald Bald had reported again the fire growing larger. The two weary ones were just about to hit the trail when a third call from Oswald Bald reported "Its the Moon rising."

Timber Sale Business is becoming more active on the Cherokee where a sale of 325,000 feet of shortleaf pine sawtimber was recently awarded at $4.50 per M.

The Tennessee Power Company has resumed operation on its sale which was shut down last fall. Approximately 250,000 feet of shortleaf pine at $5.25 per M is yet to be removed. The logs in this sale are loaded on barges and towed by motor boat four miles down Parksville Lake, where they are sawed at an electric mill.

Six Poachers Faced the Judge with Plea of Guilty at the May term of Federal Court in Asheville. The Government came through with a 100 per cent record in its game trespass cases. Five of the offenders were fined from $10 to $25 each and made to pay the costs. The sixth man was an old offender. His case was nearly five years old, due to the fact that he had eluded officers sent to arrest him many times. He received the heaviest sentence ever given in this court for violation of the game regulations, viz., 4 months in jail. He was warned by the judge that he would be sent to the penitentiary if he ever came to his court again.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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FOREST ROAD NEWS

By

F. E. Bonner, Washington

New Legislation: Continuation of the big road and trail building program on the Forests seems assured for several years more at least by legislation just passed. On June 19 the President signed the Post Office Appropriation bill which included provisions amending and extending the Federal Highway Act of November 9, 1921. Under the latter Act $5,000,000 was appropriated for Forest roads for the current fiscal year and $10,000,000 for the fiscal year 1923.

The new Post Office Act includes for roads in the Forests authorization for the appropriation of $6,500,000 for the fiscal year 1924, and the same amount for the fiscal year 1925, to be expended under the same terms included in the Federal Highway Act. This is merely an authorization, not an appropriation, further action by Congress being required before the money is actually made available. However, the action taken sets at rest to a great extent uncertainty relative to the future of the program and will allow fairly definite plans to be laid.

The Post Office bill also includes authorization for the appropriation of $50,000,000 for Federal Aid road work for the fiscal year 1923, $65,000,000 for the fiscal year 1924, and $75,000,000 for the fiscal year 1925. The only important modification of the existing law consists of a reduction of the maximum federal aid to $16,250 per mile during the fiscal year 1923, and $15,000 for subsequent years.

Forest Highway Programs: The initial Forest Highway Fund programs under the Federal Highway Act have now been approved by Secretary Wallace for all National Forest states except Minnesota, Michigan, Maine, Georgia and North Carolina. In most cases the full amount available for construction from the Forest Highway Fund for the fiscal years 1922 and 1923 has been mortgaged. The recommendations were made to the Secretary by the Bureau of Public Roads and the Forest Service jointly, after the wishes of the various State Highway Departments were ascertained. The construction of nearly 1,100 miles of fairly high type road costing about $10,000,000 is provided for in the approved programs.

Construction Progress: Reports recently assembled show impressive progress made on the Forest road and trail job during the calendar year 1921. During this period slightly more than $5,500,000 was expended. This served to construct 576 miles of road and 1419 of trails. The financial status of the various road appropriations on January 1 follows.

10% Fund (3/4/13)	$3,203,484.73	$2,674,284.51
Sec. 8 Fund (7/11/16)	10,000,000.00	4,515,524.80
FFRC Fund (2/28/19)	9,000,000.00	7,611,415.53
Forest Highway (11/9/21)	9,500,000.00	0
Forest Develop. (11/9/21)	5,500,000.00	0
Other Govt. Funds	619,385.00	619,385.00
Cooperation	5,546,893.47	5,546,893.47
Total	$43,369,763.20	$20,967,503.31

The really vast size of the present effort being made to open up the Forests is perhaps not fully appreciated even by those of us most closely identified with it. The investment of nearly $21,000,000 indicated above has resulted in the construction of 4,900 miles of road and 5,066 miles of trail. This does not include the roads and trails built in the earlier days with the funds from the Permanent Improvement item estimated at approximately $1,500,000.

The present progress of the development is highly gratifying, but a look toward the eventual completion of an adequate transportation system serving the National Forests shows a long way still to go. According to latest estimates we need further construction of 29,000 miles of road and 40,000 miles of trail which will involve an outlay of about $180,000,000.

FORESTRY IN SOUTH AFRICA

A letter has been received from Nils B. Eckbo, who was in the Service for twelve years, and who is now in charge of the office of Timber Investigations, Forest Department, located at Pretoria, South Africa. Excerpts from the letter are quoted as follows:

"It is hard to realize that I am so many thousand miles away and connected with a Forest Department of far-off South Africa. I came out a little over two years ago on a three-year contract.

"The Department consists of about 200 officers scattered through the different provinces and territories. The forests are not of large dimensions as far as area is concerned, but contain a wonderful variety of species, and certainly look like the proverbial African jungle.

"The distinct contrast to the indigenous forests are the plantations of the Union, now covering about 600,000 acres. The trees are mostly Acacias, Eucalypts, and pines, and the growth is almost unbelievable. It is not infrequent to find trees six years old, six inches in diameter and as much as sixty feet in height. Our plantation was cut last year 27 years old with trees averaging 2 feet in diameter and 115 feet in height. South Africa is usually considered a dry country and this is correct for a large portion, but there are also very heavy rainfall areas, where trees thrive. No plantations are made where the precipitation falls below 20 inches and the best results are obtained above 30 inches.

"The field of timber utilization is a very interesting one, and although it does not take me out among the tall trees as often as I used to, I like it. Have seen a great number of the forests and plantations, and have also made two excursions to the game country, where I managed to get a wild beast (buffalo), a sabel antelope, and a waterbuck. I am laying for a big maned lion, but he hasn't shown up yet and maybe it is just as well.

"I do not know how long I will remain in this country, but some day I will be back to the Wasatch, the Wyoming, and the Grand Teton.

****

Ranger Bill Says:

Speakin' of fires, I know one place where they let 'em burn, but it has its disadvantages.

There's many a slip 'twixt the efficiency register and the promotion list.

They can stop you Rangers smokin' but they can't make me quit "rollin' my own" in hot weather, remarked Jewel Dawn, our steno.

Henry K. Nichols

A clerk in the offices of the Kaniksu and Pend d'Oreille National Forests, drowned in Lake Cocollala Sunday afternoon, June 4, attempting to save the life of his seven-year-old daughter, Katherine, and two other small children who overturned a rowboat a short distance from shore.

Both Nichols and Milford Grinold went after the children and Grinold succeeded in rescuing two of them; the third, a boy, clung to the overturned boat and paddled himself ashore.

MAKE THE GRAND STAB STICK

By C. W. Wiley, Santa Barbara

"***Sometimes it is hard to determine what is wanted by our superiors, in which case we make a grand stab at the reply."--H.I.Snyder (Cleveland) in Service Bulletin, March 13, 1922.

As food for thought, this remark by Snyder provides a substantial, stimulating meal; to my mind it is plumb full of calories of truth. It's a more serious expression of the same thought that years ago prompted "Bummer" Ayres to write into one of his burlesque shows a telegram from the D.F. to Supervisors,- "Ignore circular letter Xyz-7-11-44,- it was a typographical error." Sometimes the telegram comes too late to save the field man from hard hours put in on his "grand stab."

Why are instructions and requests for information which may be reasonably interpreted two or three different ways, issued from time to time? Why is it "Sometimes hard to determine what is wanted?" The answers I submit are based on what I have seen, heard and done in the past several years,-

1. The writer has not clearly thought out his subject to the end of the chapter. He does not know just what he wants the other fellow to do.
2. The thing is so plain and simple to him,- he knows so well what he wants - he takes it for granted that the reader will understand and does not use the necessary words to make him understand.
3. He receives verbal instructions and suggestions as to what he is to say in his letter; he fails to make notes. He undertakes his letter two or three hours later, maybe the next day, or just before quitting or dinner time; he finds there is a point about which he is not sure, but he thinks it was so-and-so, and he makes his grand stab - when the returns are in he finds that he plugged up the wrong knot-hole.
4. Reviewers and signers of instructions often take too much for granted. The ambiguous phrase, the muddled statement, the "typographical error" undetected, goes its way to result later in labor lost, and to bring discomfort and chagrin to many men.
5. Verbal instructions are given in many instances, too hurriedly, and the instructee, if I may coin a word for the needs of the moment, fails to make note of what he is told. Men, also women, to whom carefully worded instructions are given, often fail to make notes in cases where notes should be made.

I am guilty. From Forester's office to Guard's cabin, who isn't?

FINANCIAL MANAGEMENT AND RESPONSIBILITY

By Leslie T. Mahurin, Pike

It is well to consider what is meant by "Financial Management and Responsibility" as applied in Forest Service work. How is it expressed and how do we know that our financial management is successful? The business world expresses the success or failure of an enterprise in financial terms. So far as I know, the Forest Service as an organization has not attempted to express any part of its success financially, although in many respects it has the same financial factors to deal with as the ordinary business concern if it chooses to recognize them. There are, however, many activities carried on from which no financial return is expected. It is clearly the occurrence of such factors in our business that has deterred us from trying to evolve a showing of success or failure in financial terms. Nevertheless, while we do not now express the results of our efforts financially, we speculate continually on what those results might be if ascertained for certain of our activities, such as timber production, grazing and special use, and endeavor to make our efforts achieve those imagined results.

There has at times been expressed the idea that it is immaterial whether the Forest Service is successful financially in the business sense; that our purpose is more in the nature of public service and not to be calculated in dollars and cents. This is true for a considerable part of our activities. But to one who has been in the Service very long, there is the realization that it is the insistent dream of even these spokesmen that our economic activities shall at least pay their own way. The idea of self-support is the rock of our faith in our undertaking and to cast it aside will be as degrading to incentive for accomplishment as the forbidding of profits would be to a business enterprise.

Financial management concerns itself with two phases in the use of funds--economy in expenditure and wise investment of time and money. At present, the supervisory officer who practices economy in time and money will usually receive more credit for his efforts than in the observance of any other principle in the management of his finances. This is true because under our system of management and accounting it is more readily noticeable. The Ranger who saves $50 on his forage allotment will usually come in for more favorable opinion than the Ranger who by spending say $25 in extra time on grazing work is able to get a fuller utilization of the range and thereby increase the returns therefrom $100. At the present time a Ranger or Supervisor who makes a wise investment of time and money is apt to be misunderstood in the showing, until a complete analysis discloses that the record as finally compiled and presented to the superior officer has conveyed a false status of affairs financially.

For example: Expenditures on the Pike Forest for the fiscal year 1920 for all classes of special uses were about $2,250. A general overhauling of special uses cases for adjustment of fees and areas was undertaken the next fiscal year. The result was that the expenditures for the fiscal year 1921 on all classes of special uses rose to $3,640, an increase of $1,390.00. A postmortem diagnosis of these figures, as nearly as can be figured out, shows that by investing about $1,000 in charge special use work, the annual revenue was increased about $300. Investing money safely at 30 per cent can hardly be considered bad, but the final expression of this activity under present methods will not show it.

Since its creation, approximately $725,000 has been expended on the Pike, and receipts have been about $325,000. Of the above $725,000 expended not less than $400,000 is invested in improvements, equipment and plantations, and can be shown in tangible form worth 100 cents on the dollar invested. In other words, $400,000 of the $725,000 is not actually used up or expended in a financial sense. It must follow, therefore, that our real expense for the period for producing income has only been $325,000. A further segregation of costs of public service and governmental functions from costs of producing income would perhaps reduce this figure at least 25 per cent.

If "financial management and responsibility" is to really acquire a meaning in the Forest Service, there must be a current accounting for invested funds in the various activities as contrasted with current operating expense for such activities, and a segregation of costs of public service and purely governmental functions from the economic activities. With such a basis accounting information could be developed so that success or failure in management of economic activities could be as definitely measured in financial terms as the business man measures the success of failure of his business. The efficiency and desirability of public service of a certain character can only be measured or judged by the application of statistics of service rendered to the cost thereof, hence the necessity of segregating cost of public service from the cost of economic activities in the Forest Service enterprise.

(D-1's Mascot)

A wimpuss grows about as big as a hoogle-bug, but it has a long tail like a collywop, and has wings like a bear cat. It lives in the top of high trees, whence it flies down to attack defenseless travelers. No harm is to be feared from a wimpuss if you know what to do when you see one coming. It is folly to shoot at them, for a wimpuss catches bullets in its teeth and eats them. The only way to do when a wimpuss comes at you is to take a small piece of cheese, either Edam or Swiss, and tack it securely on a waterfall. The wimpuss makes a swoop at the cheese and gets mixed up with the waterfall and gets his feet wet. It makes a wimpuss mad as all-get-out when he gets his feet wet, and so he hunts around for a nice piece of grass to dry them on. The minute the wimpuss lights on the grass the hunter rushes at him and ties his tail in a double bowknot. When a wimpuss has his tail tied in a double bowknot he is gone, because when he flies he always ducks his head under his body to see who is following him, and in doing this he gets his head caught in the double bowknot and chokes himself to death.

Young wimpuss is very good eating in season, but it must be cooked with strips of bloop. You first parboil the bloop and remove the pin feathers and fins. Then you cut off all the tender part and lay in the frying pan, first a strip of bloop, then a strip of wimpuss, then a strip of bloop, and so on until the pan is full. Now, put on the fire and boil twenty-four hours and serve with frapped chowchow.

But a wimpuss is not good eating unless it is killed properly. A wimpuss that has hanged itself in its tail falls so hard to the ground that it is all mussed up and is not good for anything but wimpuss hash - a favorite dish with the ferocious Swash Indians. The way to kill a wimpuss so that it will be good for food is to tie it to a tree and amuse it in some way so that it gets to laughing and can't stop. Finally, it laughs itself to death, and then it is fine eating.--Chicago Tribune.

PUTTING THE "WRECK" IN RECREATION

By A. H. Carhart, D-2

If some one were to come along and start a house, another fellow add a room, another decide differently about the kind of use he was going to put it to and put in another room, and still another make up his mind differently about it and put in still another kind of room, wouldn't it be a sweet mess? Or, if a fellow built one room because he lived alone, added another when he got married, another when Aunt Deborah came to live with them, another when the first youngster of the family let out his primal howl and ended up by having a house of a dozen or more rooms each built just as the fancy, or need, struck him, he'd have a castle that would compare favorably with the average Mexican village.

But if there were some basic plans that were established and were followed in each case there would result, not a haphazard structure that would be merely a collection of rooms but a well organized house.

Unless we watch our step in recreation planning, we are going to be right in the boots of the fellow that just did the obvious thing. A camp will be built here because it is needed RIGHT NOW. Not because it should be there in the ultimate scheme. A block of summer homes will be laid out on a particular piece of ground because some fellow can put up a good line of chatter to the Super., not because it should be there when the scheme for full recreational development is well on towards completion.

If we are going to have well founded, broad, recreational plans and developments which will serve human use of forests with the least interference with other uses and recreation itself, we will have to plan basic schemes for human use of these forests NOW.

I've said this to some old timers and been met with the statement that it can't be done. No man can look that far ahead.

Well, we can try, can't we, brother? We'll not be farther behind ten years from now if we do our best to make big broad plans for the human use of the forests. I reckon we may be far enough ahead to justify our striving a little at the present time towards the ideal goal.

I don't set myself up as a champion crystal gazer, but I josh myself into believing that I can see far enough into the future and its needs to

PUTTING THE "WRECK" IN RECREATION (Cont.)

plan forest recreation on any one logical unit at least to meet the needs ten years hence, and I try to do plans that will meet needs of fifty years from now.

The one thing that will wreck the future of recreational use in many places will be the unplanned development that has just grown up. It meets the needs and demands for the time but it fixes the future so additional development has to be messier than the Mexican village home of the fellow that built, without plan, to meet his growing needs.

Recreation in the forests is a big business. It is going to get a lot larger when the United States has two hundred million population. No big business is successful without big, broad policy plans and far-seeing working plans. But many a big project has gone to the wall because too much attention was given to detail before the big plan foundations were laid on which to carry on activities.

GRAZING CONTROL ON TIMBER SALE AREAS

By Ira T. Yarnall, Pisgah

The Annual Grazing Plan for the Pisgah prohibits the grazing of all stock on the cut-over area of a timber sale comprising 4,000 acres. This sale will have a life of at least 6 years. Due to the cutting of sawtimber and acidwood as separate operations, it is impossible to complete a natural logging unit in less than one year, and usually a longer time is required. There are no natural barriers to prevent the drift of stock on the cut-over areas. Most of the logging is done by cattle and the numerous families located on the sale area need milk stock for domestic purposes.

With these facts in mind, a plan for handling the grazing of exempt stock on cut-over areas has been inaugurated with the idea of reducing to a minimum the danger to sprout and seedling growth. The plan provides for building a quarter of a mile of fence and the closing of gaps along the flume, which is the transportation system used on the sale. This system of fences closes the mouths of all but three branches on the lower end of the sale area and protects 750 acres of land, and leaves open 240 acres that have been cut over for 2 to 3 years and grazed rather heavily for that period.

Examinations made of the grazing damage already incurred show that a large part of the sprout growth has been heavily browsed. Chestnut sprouts ten feet high have been defoliated and ends broken off by cattle nipping the leaves on side branches and bending over the main stem in order that the tender shoots could be eaten. A considerable number of the poplar seedlings have been browsed, but new shoots have generally started. A fair percentage of the seedlings has escaped damage, and, with all grazing now prevented, it is believed that an adequate stand of valuable timber species will still be secured.

Future comparisons between the protected and the unprotected cut-over areas should show to what extent and for what periods cut-over lands in the mixed hardwood type can be grazed without sacrificing the future stands. This is especially important, for, if such grazing can be allowed for 1 to 2 years, it will be possible to allow the use of the milk and work stock on our timber sale areas without working a hardship on the purchaser and his woods workers, or requiring the added cost of extensive fencing. On one area closed by the present fence, most of the stock were grazed for two years, and the browsing damage was very severe. The extent of the recovery of this sprout and seedling growth will furnish valuable data for the administration of future timber sales. All in all, there is much to be determined, and it is believed that many of our existing theories will be proven or exploded on this area.

WHAT IS THE FISH CAPACITY OF YOUR FOREST?

What is the public demand for fishing in your Forest? What streams on your Forest are going to supply this demand? What streams on your Forest need stocking, and what kind of trout are best adapted to the streams? How can this supply be secured - by artificial restocking, or by closing streams to fishing?

These and many other kindred questions are becoming more prominent in Forest administration and occupying the thought and attention of Forest officers. As an indication of the work already done, the following is quoted from a recent report of District 2 to the State Fish & Game Commissioner of Colorado:

"During the year the Forest Service received about 4,173,000 trout fry and 3,000 pike from State hatcheries and 776,000 trout fry from Federal hatcheries, and placed them in the streams and lakes within or near the National Forests of Colorado. In addition, as you know, a large number of fish were handled by sportsmen's associations and private citizens. This is an increase of over a million in the number of fry received from the State, but, due to the curtailment of appropriations to the Bureau of Fisheries for fishery purposes, a decrease of 423,900 in the number of fry received from the Federal hatcheries. Under the reduced appropriations it was not possible for the Bureau of Fisheries to operate their hatcheries to their former capacity. The increased cooperation with the State in this work is indeed gratifying to the Forest Service.

"Each year the fish received by the Forest Service are better handled, resulting in larger numbers living."--C.E.Rachford.

WHAT IT COSTS TO OPERATE A GOVERNMENT CAR

The figures of the accompanying tabulation may not be 100% accurate, but they hold interest for purposes of rough comparison between Districts.

	Dist. 2		Dist. 3		Dist. 4		Dist. 5		Dist. 6		Dist. 7	
Type of car	No.	Average cost per mile	No.	Average cost per mile	No.	Average cost per mile	No.	Average cost per mile	No.	Average cost per mile	No.	Avgr. cost per mile
Ford Worm-drive Truck			2	.175	1	.125	8	.1251	-	--	-	--
Ford Regular drive	11	.0616	5	.1120	7	.0797	19	.0612	14	.078	9	.0810
Dodge		--	1	.120	-	--	1	.1845	7	.0771	-	--
G.M.C. 1-Ton		--		--	1	.01400	4	.2945	20	.1865	-	--
Reo Speed Wagon		--	1	.130	-	--	2	.1390	8	.0832	-	--
Pierce Arrow		--			-	--	-	--	4	.2050	-	--
International		--	2	.815	2	.2808	-	.2550	1	.1500	-	--
Nash		--	1	.281	1	.2260		.2180	1	.2300	-	--
Republic 1-Ton		--						.153		--	-	--
Mereland		--						.157				

How is the fleet of Government-owned trucks operated by the Forest Service distributed?

District 1 - 34
" 2 - 11
" 3 - 12
" 4 - 12

District 5 - 41
" 6 - 64
" 7 - 9
" 8 A Naval Power

E.W.K.

NEW METHOD OF CATTLE IDENTIFICATION

"....Science now identifies cattle by the Bertillon system. Instead of frightening, tying and throwing the poor beasts, and burning their flesh with a red-hot branding iron, their noses are dipped in ink and a 'fingerprint' taken that identifies them ever afterward. That's for valuable cattle. Common beasts are still branded." (New York American).

We expect that some Forest officers will immediately jump at this method. Our brand books may be thrown away, but some difficulty may be experienced in teaching the force how to card index "Bossy's" nose prints.

How this will change the cattle rustling scenarios in the movie thrillers

W.A.D.

THE CEDAR GLADES OF THE DISMAL SWAMP

By C. F. Korstian, Appalachian Exp. Sta.

During an eight weeks' field study of southern white cedar in the Dismal Swamp, in cooperation with J. S. Holmes, State Forester of North Carolina, and Alfred Akerman, District Forester for southeastern Virginia, a number of interesting matters, both historic and scientific, were encountered. George Washington is reported to have taken cypress and "juniper," as the southern white cedar is called locally, from the swamp in "lighters," long narrow barges, towed in ditches or small canals. Some of these ditches are still evident. The early settlers, following the Revolutionary War, had an extensive trade with the West Indies in staves and shingles riven from cypress and juniper in exchange for molasses, sugar, and tropical fruits. George Washington even made a written statement that he was shipping juniper to Mount Vernon with which to build an ice house.

The Dismal Swamp and the Albemarle Sound tracts of white cedar are some of the best in the country, although many of the stands have been cut over once and some twice. Many of the resulting stands are dense and even-aged. To one acquainted with the western red cedar forests of the Northwest a resemblance is apparent, due to the long clear boles. The southern white cedar, however, does not attain the large size reached by the western red cedar, rarely exceeding 3 feet in diameter and 100 feet tall. A dense tangle of shrubs and vines occurs under this cedar. Sphagnum moss is frequently abundant and the swamp is inundated for several consecutive months during the winter and spring. In the late summer and fall the water table falls to as low as 2 or 4 feet below the surface.

It may be surprising to the men in the western districts to know that the white cedar slash left after logging is very inflammable and will burn down to the water's edge when the swamp is flooded, and during the dry fall the upper portion of the peat will burn.

Douglas fir and western white pine are not alone in possessing the characteristics of bearing seed which will remain viable when stored in the forest floor. Seed which had lain stored in the upper inch of peat for at least one year, and some of it doubtless longer, has been germinated at the rate of over 1,630,000 seedlings per acre, while from the underlying inch of peat germination was obtained at the rate of over 47,000 per acre. It is also interesting to note that seeds germinated at the rate of over 3,380,000 from the upper inch of peat in an area cut clean the previous year; over 100 yards from the nearest standing trees. Seedlings were also found in the rollways on this area at the time the samples of peat were collected. This discovery evidently accounts for the dense stands of reproduction which are found on certain cut-over areas, even following a first burn under certain conditions. It is also obvious that there is more than enough viable seed stored in the upper layers of peat to restock an area after cutting and even after the area is burned over when the swamp is filled with water. Fires during dry periods are especially destructive, both to the young growth and to the seed in the upper layer of peat.

Another interesting phase of the study which came to light is the question of land utilization. Considerable sentiment favoring the drainage of the Dismal Swamp has developed in the region. The hardwood swamps surrounding the white cedar glades are generally underlain by a clay or sandy clay subsoil which favors the retention of the fertility of the soil when tilled. On the other hand, the peat of the "juniper" swamps is underlain by a fine sand containing only occasional pockets of clay, which allows the most of the soluble salts to be carried below the zone of root activity of agricultural plants. It is said that the cedar peat is unsuited for agricultural use and that there is a tendency for it to oxidize, dry up and blow away. All of the evidence at hand, so far, points to the unsuitability of the white cedar swamps for agricultural use, being better adapted to timber production.

LIFE OF TREATED TIES ON THE U. P.

By C. N. Whitney, D-1

Representative figures taken from a Maintenance of Way Statement showing statistics on ties removed from tracks, give a very good idea of the lasting qualities of treated lodgepole pine crossties in comparison with treated ties of other species.

The following figures based on service records for ties removed during December, 1920, are from several different divisions;

U. P. System	Lodgepole pine	Southern pine	Douglas Fir (West Coast)	Average Life of all treated ties
Nebraska Division	14.88	12.05	10.00	13.31
Wyoming "	14.47	11.27	10.07	11.84
Kansas "	17.00	--	--	17.00
Colorado "	14.21	12.41	10.67	12.95
Central "	16.89	10.93	10.00	11.11

The Union Pacific lines use the Burnett process of treatment and inject 0.4 pounds of zinc chloride per cubic foot, into each tie. This amount is considered sufficient to preserve a tie through its mechanical life. All ties are protected by a standard tie plate which is 8" wide and from 8½" to 9¼" long, according to the width of rail base of the various weights of rail. All ties used are treated.

The U. P. was the pioneer road across the country and the first ties put in the track west of Cheyenne, Wyo. in 1868 were of lodgepole pine. Ties placed untreated with ordinary dirt ballast, would usually last about five years. In the test tracks west of Laramie, Wyoming, with the Sherman ballast consisting of decomposed granite, treated lodgepole pine ties laid in 1906 are still in use.

RECREATIONAL DEVELOPMENT ON THE MEDICINE BOW FOREST

By H. C. Hilton

The City of Laramie, Wyoming, through a special committee of the Council of Industry, will this year begin the construction of a series of improvements upon the city camp ground at Brooklyn Lake. The number and kind of such improvements will be limited for the first year, pending a detailed investigation of the area as well as the entire Forest, which will be made by Recreation Engineer Carhart with a view toward a regional Forest recreation plan. The city plans not only improvements on the camp grounds, but trails and shelters which will make the adjacent high mountain section more accessible to all visitors.

The Boy Scouts of Laramie have decided to establish a permanent camp in the Forest beginning this year in July. The entire area adjacent to Bear Lake has been reserved for the Scouts. This lake is located at a distance from the main recreational area of the Snowy Range region which will insure sufficient privacy to the Scouts from the unwelcome attention of the average tourist. The Rotary and other civic organizations of the city are backing the plan of the Boy Scouts and it is certain that a substantial camp will be erected.

A permanent board-and-pointer for use at Brooklyn Lake in identifying the various peaks, lakes and other features will be contributed by one of the lumber companies of Laramie. The location of these features will be shown on a waterproofed board, to which is attached a movable pointer and by which the visitor may immediately determine the names of the various lakes and peaks.

WASHINGTON NOTES

John D. Guthrie, in charge of Public Relations, D-6, has been in Washington on detail for a short time.

Assistant Forester Herbert A. Smith addressed the Biennial Convention of the General Federation of Women's Clubs at Chautauqua, New York, on June 23. The subject of his talk was "The Immediate Task in Forestry."

Associate Forester E. A. Sherman expects to leave for Alaska on July 10.

National Forest Receipts for the period July 1, 1921, to May 31, 1922, show a net increase of $2,133,809. Timber sales, the one major activity that has been showing a decrease, is making big gains and it is predicted will go under the wire on June 30 with a substantial increase.

The President on June 30 signed the bill providing for the $240 bonus for the fiscal year 1923.

Logging Engineer Austin Cary was given the honorary degree of Doctor of Science by Bowdoin College at its annual commencement exercises on June 22. He had previously received an honorary degree of Master of Arts. The announcement was made in the following terms:

"Doctor of Science

Austin Cary of the class of 1887, teacher in the forestry schools of Yale and Harvard; author of the most practical manual for foresters ever written; pioneer in the profession of forestry in America, to which for thirty years he has given his strength and his ability, so that he is recognized as one of the leading foresters of the country."--E.E.C.

Doctor Frank A. Waugh, Professor of Landscape Engineering, Massachusetts Agricultural College, has been appointed as Recreation Engineer in the Forest Service to cover the months of August and September. He will confer with the District Foresters at Denver and Ogden respecting recreational features in their Districts, in which the Forest Service is interested.

The Forest Service photographic collection at the Washington headquarters now contains 46,738 pictures of National Forest activities, scenic attractions, etc. 1842 new photographs were added to the collection during the past fiscal year.

Honorable W. C. Hawley, member of the National Forest Reservation Commission, and Associate Forester E. A. Sherman of the Forest Service attended a meeting of the Pennsylvania Forestry Association at Warren, Pennsylvania, on June 30, at which Mr. Sherman delivered an address on "Our Forests and Our Future." While in this section they made a general examination of the forest lands within the Allegheny Purchase Unit which the Government is planning to acquire for National Forest purposes.

Old Bulletins Wanted. The President of the Alaska Agricultural College at Fairbanks has requested District Forester Flory to supply his institution with a complete set of Forest Service publications. It appears that the Geological Survey has succeeded in filling a similar request by sending out a general call to its members to supply missing publications. In our case it is appreciated that many bulletins are out of print and can not even be secured from the Superintendent of Public Documents. Some of these old bulletins may be stowed away at various field offices, and this is simply a reminder that if you do not need them we shall be glad to have the bulletins sent to Washington at the earliest possible date.--Ed.

FOREST PRODUCTS LABORATORY

Laboratory Mail Increases: A recent check for one week of all mail leaving the Laboratory showed that 3,670 pieces, weighing a total of 400 pounds, were mailed during the period of May 10 to 16, inclusive. Approximately one-third of this mail went to the 5th zone; one-fourth to the 2nd zone; one-fourth to the 3rd zone; and one-sixth to the 4th zone. A similar check was made one year ago which showed a total of 931 pieces, weighing a total of 140 pounds and 15 ounces, which were sent out.

Microscopic Measurements: In studying wood characteristics under the microscope. Wood Technology in one month recently made 800 measurements of fiber lengths and 3,250 measurements of cell wall thicknesses.

Tires and Bread and Honey: Almost every known product eventually goes through the container investigations mill at the Laboratory in the course of cooperative work studying defects and planning improvements in containers used in shipping these products. Export boxes for Goodrich tires, the boxes holding eleven tires to the load, were recently redesigned; a study of bread shipping boxes for loads of 45, 72 and 160 pounds respectively was made; and the boxes used in shipping the well-known Airline Honey which a representative from the firm brought to the last boxing and crating course were looked over. There's a rumor that all of the staff of the Box Laboratory were remembered in a case of honey that mysteriously popped up at the Laboratory several weeks after the course.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Count William Rudolph Rovigno, member of the Montenegrin nobility, has been appointed Forest Guard on the Superior. Count Rovigno, whose right title is the Duke of Rovigno, accompanied Buffalo Bill and Theodore Roosevelt on numerous hunting expeditions. During the past year he has been connected with the office of the Minnesota State Fish & Game Commission. Cornelius Vanderbilt, Jr., of the New York Times, is expected to spend a part of June with the Count on a camping trip.

The Tour of the Exhibit Car put out by the Duluth & Iron Range Railroad Company covered 2,000 miles and passed through 30 towns in 6 states; 57,349 people went through the car. Thirty-three lectures to 10,860 people, both with an without lantern slides, were given by H. N. Wheeler, who accompanied the car through the greater portion of the trip.

The House and Senate of the Colorado State Legislature, during an extraordinary session, passed a concurrent resolution condemning the Public Shooting Grounds Bill. The resolution was passed apparently at the instance of the Colorado State Fish and Game Department, which has been rather active in opposing the Public Shooting Grounds Bill since its first introduction in Congress. The State Rights idea is, of course, one of the main things behind the action and it resembles to a considerable extent the action by the Colorado Legislature years ago in the famous Fred Light grazing trespass case which was carried to the United States Supreme Court by the financial aid of the State Legislature.

DISTRICT 3 - SOUTHWESTERN DISTRICT

There are Some Thrills Outside the Movies: According to the St. Johns Observer, Ranger Haynes of the Apache recently had a nerve-racking experience. On the evening of May 17 he rode up to the Blue lookout station and upon opening the door of the cabin was confronted by a gun in the hands of one Oscar Schultz, who had previously robbed the Arizona Central Bank at Cooley. The Ranger, not expecting such a reception, was forced to take a back seat while Oscar cooked supper. The situation was soon relieved by the appearance of two members of the sheriff's posse, who killed Schultz.

Close Call for Forester's Party: As Col. Greeley, District Forester Pooler, and Supervisor Douglas were cruising happily along the Luna-Reserve road on the Datil, the Ford in which they were riding suddenly let go a wheel. Douglas succeeded in stopping before the car turned over, but not before the Forester had the door open and his jump all planned. No one was hurt and the journey was resumed when the wheel was brought back and made fast in its accustomed place.

Six out of Seven: Hiler of the Datil hangs up another trophy. Yesterday, Martin Negra, an Indian sheepherder, was brought before Justice Bruce at Reserve, N. M., by Ranger Hiler and convicted of starting a forest fire. The fine was $25.00 and costs. This makes Hiler's season record stand at seven fires on his district with six convictions. We predict that sheepherder's fires on the Datil are going to cease to be a popular sport.

Fire Situation: To June 1, the Arizona forests had had 15 A, 19 B and 5 C fires, and the New Mexico forests 32 A, 25 B and 28 C fires. In Arizona there have been 5 prosecutions, while in New Mexico 11 have explained to the Judge. About one-half of the New Mexico fires occurred during the past 10 days, the majority of which were caused by lightning.

DISTRICT 5 - CALIFORNIA DISTRICT

Turpentine Operation on Stanislaus: Forest Inspector Eldredge of Washington, Supervisors Wulff and Benedict, Forest Examiner Brundage, C. L. Hill, in Charge of Forest Products, Logging Engineer J. H. Price and Assistant District Forester Woodbury recently foregathered on the Stanislaus Forest to make a close study of the feasibility of instituting a turpentine operation on the Hog Ranch and Sawmill Mountain Chances, Stanislaus Forest. Messrs. A. Peters and R. Lind, who are interested in this industry from the operating standpoint, were also in the bunch. Eldredge, familiarly known as "Eli," assumed the roll of a "grave" and "learned" professor, and we'll say he got away with it in good shape, although he was obliged to take "second money" during the evening sessions, which were not entirely devoted to official work.

As the result of the trip, a sample naval stores agreement has been drawn up covering a proposed sale of 140,000 cups on the above-mentioned chances. The Hog Ranch Chance is now under timber sale contract and heavy cupping system is proposed on this area. On the Sawmill Mountain Chance, which has not yet been sold but which we believe is readily salable, a light cupping system is provided for. Only trees that will be cut are to be cupped and cutting is to follow cupping as rapidly as is feasible. The proposed contract period is nine years and rates are to be reappraised as in timber sales. The minimum price is $15.00 per M cups per season. If this sale is made it will be regarded as an experiment and further sales will not be made until the results of this experiment are evident. A very close study will be made of the effect of turpentining upon rate of growth of trees of various diameters, and the increased fire hazard due to turpentining, as well as the economic features of the project.--T.D.W.

Rental Rates on Private Lands: While on the Angeles, Charlton gave me some interesting figures on values of private land. He cites many cases where parties are paying an annual rental of $50 to $85 for a summer home site right alongside of similar sites for which we are charging $15 to $25 annual rental. So after all our charges are quite moderate compared to what a renter pays who occupies private lands. This is one big reason why on the Angeles at least it requires no soliciting to rent summer home sites as rapidly as new areas can be made accessible.--L.A.B.

Preparing for Fire Season: Reports of fire guard meetings and speeding up of preparations for this fire season are coming in in fine shape.

The Sierra held a meeting on June 1 and 2, at Northfork, of all guards and lookouts. Thus far the opening of the fire season in the District has been greatly delayed and the heavy winter throughout most of the high mountain country has been a decided boon in keeping the country in a safe condition.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Some Show! The big event of the year on the Snoqualmie was the Forest Protection Week parade in Seattle. This was some parade, all devoted to fire prevention. Over four blocks long, some 1,500 people in it, six or eight floats, four pack mules, some 900 Boy Scouts, several hundred Camp Fire Girls, Mountaineers and Forest School students, lots of good, big signs bearing fire slogans, an 18-piece military band, special "stunt" features, led by four Cops, parade and films used later in Seattle. The Snoqualmie had a fine float, Forest School had several, one the prize winner. Altogether, the parade was the biggest and best piece of fire prevention publicity yet put over. Supervisor Weigle had charge of all the parade arrangements and Deputy Treen made the very effective Snoqualmie float. The parade was worth seeing. It took place on time at 1:30 P.M. Saturday, when the streets had most people out, and with the large number of clear and well-worded signs, put the idea over to the man on the street.--J.D.G.

What Irvin Cobb Thinks of Forest Rangers. The following is an excerpt from an article appearing in the May "Cosmopolitan" by Irvin Cobb entitled, "The Bear that Hunted Me." The story is based on Cobb's Deschutes trip made in 1920.

"Or deeper still in the woods you may meet the ranger himself, a gallant figure in his greenish drab uniform. Usually he is young; always he is competent; nearly always he is deeply in love with the work he is doing."

Public Relationing: This from the Angora and Milk Goat Journal for February:

"A new map of Oregon, issued by the Southern Pacific lines, carries a paragraph calling attention to the ever-present Angora goat on brush covered and tree-clad hillsides of the Northwest. Statement is made that on the National Forests west of the Cascades there are some 250,000 acres of unused range suitable for Angora goats. This map of Oregon will be supplied by the Southern Pacific Company or by addressing the Chamber of Commerce, Portland, Oregon."

The Office of Grazing gave this information to Public Relations which gave it to the Southern Pacific, which published it in their folder, which the Angora and Milk Goat Journal quoted, which some goat man may read, who may apply for some goat range--and there you are!

DISTRICT 7 - EASTERN DISTRICT

The Mount Mitchell Development Company of Black Mountain, N. C., is constructing a motor road to the base of Mt. Mitchell. This road uses the old tram bed formerly occupied by a logging railroad. It will be a toll road, and the charge will be $1 per person. Mr. Perley, the manager, expects to keep a crew of 10 men on the road, which is 22 miles long, all the summer and fall. Traffic will be routed one way and regulations will be enforced similar to those which are now in force on the Pisgah Motor Road. At the upper terminus of the road Camp Alice will be reconstructed and used as a hotel. Doubtless this road will be one of the most popular in the South. The owners think that 25,000 to 30,000 people will go up the road this season. The last 5 miles of the road toward Mt. Mitchell are within the National Forest. A free use permit was given the company for the right of way along this stretch. The company, however, is charging toll only for the part that they own and since the 5 miles in the Forest can not be reached any other way except by the road over private lands, there can be no objection to the toll which the company will exact. No toll will be charged to Forest Officers, however, from Black Mountain to Camp Alice, so that if any Forest Officer wants to see the top of eastern America without paying the toll, all he has to do is to flourish his badge.

The Pennsylvania State College School of Forestry was granted a permit to locate a training camp on the Natural Bridge National Forest during the months of April and May, this year. The camp, consisting of fourteen of the graduating class and two instructors, was opened early in April and continued until the last week in May. The work consisted of timber estimating, plane and topographic surveying, preparation of volume and growth tables, and a study of logging conditions in the region. Associate Professor W. G. Edwards, who was in charge of the camp, reports that he is very much pleased with the location for the camp and intends to use the same site next year, and possibly will establish a permanent camp here in the future.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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OBJECTIVES, ADMINISTRATIVE WORK PLANS, PERSONAL WORK PLANS

Operation men talk a lot about them, have they got them - - practice what they preach - - know the difference between them - - sauce for the western geese and sauce for the Washington ganders.

In reply Operation insists that it has them and further insists that the Bulletin print at least the Branch of Operation Objectives and Administrative work plan to show that it's no bluff.

Here they are.--R.H.

Administration

Objectives in Administration

1. To find, establish and develop those systems, methods, principles and traditions which will produce the largest output of net public benefits from the opportunities, men and money available, by most effectively stimulating the individual worker, and by coordinating, guiding and controlling the efforts of individuals and administrative units.

Administrative Work Plan for Subject of Administration

1. By January 1, record, digest and interpret the facts, ideas, questions, etc., encountered during the season which bear on attainment of the objective in the subject of administration. Kelley, Kelleter, Anderson, Herms, Headley responsible.

2. "Use of time and recording and appraisal of accomplishment." Give particular attention to ways of getting the largest number of days per year spent on productive work in the field as distinguished from nonfield and ineffective field time. Pooler, Kelley, Anderson responsible.

3. Continue work on the use of standards. Kelley and Headley responsible.

4. Continue work on all measures of value to understanding and practice of planning. Kelley and Headley responsible.

5. Continue any work which promises to promote improved practice in inspection. Cooperate with Loving to make inspection in his field most effective. Kelley and Headley responsible.

6. By January 1 complete first review of forms and procedure and make changes found to be desirable in interest of simplification, or take first steps on changes for which higher authority is required. Anderson, Kelleter, Herms, and Headley responsible.

7. Determine whether the Ogden and Washington supply depots can be made to give service of greater net value, and if so take the steps indicated. Falck, Kelley, Randal, and Kelleter responsible.

8. By July 15 prepare second draft of Administrative Manual, using comments and criticisms received to date and issue it in mimeographed form for consideration of Districts pending meeting in spring of 1923 of District Foresters as committee to act on scope, form and content of new Administrative Manual. Headley responsible.

9. Continue to help in revising and liberalizing of Fiscal, Administrative, Property and Leave Regulations of the Department. District Foresters responsible for giving data and making recommendations to Forester. Anderson, Kelleter, Headley responsible. - Loving cooperating.

10. Carry on general and special inspection of work of District Foresters as far as possible. Kelley, Kelleter, Anderson, Headley responsible.

11. Working with Solicitor and office of Inspection, continue to develop subjects of reimbursement for lost or damaged property, and other similar subjects. Kelleter responsible.

12. Represent Branch of Operation at Supervisors' meetings in winter of 1922-23. Kelley and Kelleter responsible.

13. Carry on routine of the Branch. Kelley, Kelleter, Anderson, Falck, Herms, Randal, Allen, McLaurin, Dunnington, and Headley responsible.

Fires and Figures

By J. A. Larsen, Priest River Exp. Sta.

Some of the questions which have disturbed my peace of mind as I have roamed the woods and observed evidences of fires everywhere, or when I have fought figures on forest fires in the office, are: What of the past forest fires which ran rampant and unhindered by our tribe? How often on an average did the fire revisit the same area? What was the average age obtained by the timber before its bleached trunks gave way to a new crop? What was the average fire rotation? Was the timber destroyed by fire faster than it could replenish itself?

Now it happens that in all my wanderings in the woods I have not come upon a place worth mentioning where fires did not burn at one time or another. Even in stands of hemlock and red cedar 500 years old are the ashes and charred remnants of old burns.

Since this leads me to conclude that fires have burned practically everywhere, and since the average total age of our stands does not exceed 250 years, I conclude that the entire forest area in District One burned over at least once each 250 years. (To be sure there are a few stands in naturally protected places which very seldom burn, but these are the exception rather than the rule.). On this assumption an average of 76,000 acres of the 19 million acres of timberland within National Forests in District One burned over each year. The fire records from 1908 to 1921, including the two serious seasons of 1910 and 1919, show an average of 360,000 acres. But 1910 and 1919 were exceptional and if these two are eliminated from the calculation the average area for 12 years is 89,000 acres per annum.

On the basis of 75,000 acres burned annually, 240 million board feet were killed each year. Since the annual growth on our total stand of 65 billion board feet is estimated at about 900 million board feet or about 1½%, the annual destruction by fire has been only 27% of the growth. Natural death, fungi and diseases must have done away with 73% of the growth. Now for the lesson.

In spite of all this destruction we found these forest areas quite well stocked with timber when we came West. There were really no very extensive denuded areas. At present there are only 333,000 acres of burned forest land not restocking in this District. Our past records show that this burns over in less than four years. Evidently natural reproduction is on the whole prompt and satisfactory, and the problem of natural reproduction may not be so serious as we thought at first. Recent field studies strengthen this belief. What does appear from recent studies is that north and east slopes in Idaho and western Montana restock promptly, while the south and west aspects, which are exposed to the sun and the drying winds from the desert region, are in most instances exceedingly slow in restocking, and that extensive second burns which follow in the wake of the first before the new stand is old enough to bear seed also reproduce slowly and unsatisfactorily.

It is evidently the business in fire protection to see that the 25% of the growth is harvested instead of burned up and to eliminate additional damage by the now increasing man-caused fires which were not such a great factor in the past. By eliminating fires we will help Nature build up a better soil than generally exists; this will greatly increase the yield and help produce better material. Incidentally, we will also favor an increase in number of spruce, cedar and white pine which, under the sway of past fires, have yielded terrain to larch and lodgepole pine and have retreated to protected slopes and canyons.

Why Is a Herbarium?

By E. N. Munns, D-5

Back in the Dark Ages, when the underworked Ranger and overpaid Forest Assistant did little besides find section corners and go into debt, it was a fetish in the Service to make a collection of the "pretty wild flowers," homely weeds and ungrazed grasses whose names were unknown. Some of the Forests gathered many of these specimens, ran a "pressing" department in the storeroom and built plant cases so big that they could not be taken through the doors when the office was moved. Now these plants are all too often permitted to crumble to dust as they lie buried under the closed files, while the elaborate cases have been converted into miniature supply depots.

At one time, these herbariums were used more or less frequently by the new Supervisor, deputy or assistant, and once in a while even the Ranger was permitted to gaze reverently into its sacred and rather musty interior to fi what certain poisonous plants looked like or what the name of the bush was that grew on the top of Lookout Mountain. Many of these herbariums are in good shape to-day and are a distinct aid in both grazing and forestry work. Of late, they have not been used frequently except by the specialists, while the addition of other plants is looked upon as a form of drudgery which can readily be passed by.

The herbarium is distinctly worth while, and as time goes on and more new men come on the job, it will become increasingly more worth while. Under our more intensive forest management, grazing and reforestation work, the herbarium will be more and more sought after, for a knowledge of our plant life will greatly aid in such things as determining site quality when the original stand has been removed by fire or cutting; whether seedlings can compete with the native vegetation, or whether we shall have to plant, and what and how. Perhaps some of these things appear visionary and far fetched, but the time certainly will come when much of our work can be based upon a knowledge of the species inhabiting an area, and this knowledge can be greatly furthered by increasing the extent of the herbarium. We do not believe that it is necessary to go to extremes in this collection, but if one or two species per Ranger were collected a year, the aggregate per Forest and per District would be of inestimable value.

There is also a service here which should not be overlooked. In some of the States, especially in the West, the plant collections in the universities and schools are woefully meager and even the ranges of some of the important forest plants are incomplete. Botanists aid us in the preparation of keys and descriptions of plants, their ranges, habitats and uses, so that anything we can do by furthering local agencies or individuals to a better understanding of our plant life will in time return to us many-fold. While the collection of these plants is entirely voluntary at present, still our interest in the work and our general policy of service should be sufficient to give the matter more than passing thought even if we do not expect to use the material ourselves.

Statistical vs. Questionnaire Reports

By Earl W. Loveridge, Carson

In connection with the Forester's query 5 G.A. relative to administrative economies, the question arises as to what other business requires such reports as does Forest Service work. The executive of a railroad, for instance, does not ask annually for a lengthy document worded and in the best literary narrative style, but looks for his information to be presented to him in a concise, statistical and chartlike form whenever this is possible. Curves or other graphic methods present the desired data in such a clear way that the digestion of wordy reports is done away with.

Contrast this method with the annual Silvicultural and Grazing reports, especially the latter, which begin with the Ranger and spoil his sleep and appetite for at least a week, cause the Supervisor to lose his place on the right side of the Heavenly throne as he goes through the Rangers' reports separating the needed data from the questionable, and finally erupt the District Forester into a series of startlingly stiff standards as he works for time to consider fifteen to twenty lengthy Forest reports and distill the essentials from them.

The chuckles of satisfaction caused by a short, meaty letter never fail to show that brevity, the soul of wit, has other good qualities, and if the above mentioned faults hold true with the opinions of other observers of Service procedure, the questionnaire or statistical form of report should be pleasure producing and more frequently used.

As an example of how this method might be used, a proposed revision of the Form 658, Rangers Grazing Report, is here given in part.

Form 658
(Revised)

RANGERS' GRAZING REPORT ______________ District

______________ National Forest-For the period ______________ to ______________

(Enter replies opposite the questions-attach supplements if needed)

1. Per cent of rainfall as to previous years ______________

3. Condition of stock at time of entering and leaving Forest ______________

5. Describe, with acreage, areas overgrazed and damaged ______________

7. Market conditions, weights, sales of stock ______________

18 questions in all, with reply spaces, on letter size sheet.

Making No. 1 Clear from a Half Grown Spruce

By C. W. Boyce, Washington

It is the cellulose of wood that the pulp and paper industry uses in making the myriad varieties of paper which are now available. Through long experimentation the industry has found that the best, most abundant, and most cheaply exploited source of cellulose in the world is wood. Other materials may be used if necessary, but for the ordinary variety of paper for both educational and mechanical purposes that which is made of wood pulp is the cheapest consistent with the quality.

The future of the paper industry is unlimited. The industry is now merely in its beginning. Mark the increasing use of paper. Look to Russia, China, Europe, and even America. Everywhere there are vast multitudes which are potentially a source of great demand, but which now are barely acquainted with paper. Think what a demand there will be when these people really become acquainted with paper. Then turn to the use of paper for mechanical purposes. Every year sees new uses, most of which are substitutes for wood. The pulp manufacturer can go to the woods, cut small, half-grown trees, pass them through certain processes and turn out a product which, in many cases, takes the place of the best lumber obtainable. This procedure is increasing rapidly, for instance, in the last 21 years the paper board industry increased its output just 422 per cent.

Imagine what this means to the foresters of the world! Among other things, it means simply that it will no longer be necessary to cut the customary three cubic feet of wood to obtain one cubic foot of lumber. It means that to obtain the equivalent of one cubic foot of wood in cellulose, we will cut less than two cubic feet in the forest, which not only makes the equivalent amount of cellulose but some alcohol as well, and lubricating oil, cow feed, castile soap, and a myriad of other things not yet obtainable, but known to be present. It means that wood can be cast as is metal, with the same relatively small waste. For instance, to-day we waste 85 per cent of a block of highly selected wood to make a French heel; tomorrow we may be able to make that same heel by casting in a mould wood pulp obtained from a half-grown spruce. It's coming! Look to your Victrola,- the intricate and beautiful carving may be wood; it looks like it, but is it?

Forest Communities Can Duplicate Action of Jack Miner

By Smith Riley

The remarkable manner in which water birds respond to encouragement is strikingly demonstrated by the action of Jack Miner of Kingsville, Essex County, Ontario, whose wild geese have made him famous throughout the United States and Canada. As a hunter of long experience, Miner became converted to the idea of making friends with the birds. Adjoining his brick and tile factory was a small pond, and in 1904 he purchased seven wild geese, pinioned their wings, and put them on the pond, which he enclosed and which it should be noted is next to a much traveled highway. No wild visitor came until 1908; then on April 2, eleven geese stopped with him for a month on their way North. In 1909 thirty-two wild geese arrived on March 18, and on March 4, 1910, wild geese began to arrive from the South until, in two weeks, 350 had come in. Each year the geese are fed corn on the cob. In 1911 geese began to come "in clouds" on February 20. Every year since they have visited Miner, not in hundreds, but thousands.

Plants of pinioned geese or ducks, say mallards, can be made on lakes or reservoirs or streams near towns or ranches where they can be fed and given shelter in severe weather. Such birds, if properly mated, will bring forth young that will remain in the locality as long as they are furnished food in severe weather. A plant of mallards was made in Rock Creek Park, Washington, D. C., some 12 years ago. All the original birds are dead; all those now in the flock, which numbers 30, can fly. They seek rest and feed along the five miles of Rock Creek in the Park. They have been fed corn in the south end of the Park during the winter weather, spring and fall. Numbers of birds are attracted to the locality by the presence of these ducks during the spring and fall migration and are mighty attractive to see along the creek. Think of the thousands of water areas offering shelter and aquatic life where such plants could be made near some town or ranch. There are plenty of places where no feeding would be necessary. I have in mind those big springs in Jackson Hole, Wyoming, where both ducks and geese are seen all winter.

Entry Survey Policy

By W. P. Stephenson, D-1

In the past the order of making Homestead Entry Surveys in D-1 depended largely upon the urgency of the case. That is, if a man had lived up to the homestead law by having the required amount of cultivation and improvements and his time for proving up had arrived, his case was considered urgent and a survey was necessary. In previous years the Supervisor reported the cases that were of an urgent nature upon his Forest and, as a rule, the entry survey was made the following season.

Heretofore the number of urgent cases in the District was more than sufficient to occupy the time of all the available survey parties that could be placed in the field, depending upon the funds allotted for this purpose.

During the past field season it was found that the number of urgent cases was not sufficient to occupy the attention of all the parties in the field. So a change in policy was necessary. It was decided to take each Forest as a unit and survey the remaining claims thereon. Before entry surveys could be made on the remaining cases it was necessary, by a ruling of the Land Office, that they be entered or filed upon. With this in mind, surveys were made of all the entered claims on some of the Forests in the District. But since then some of the unentered cases have been filed upon, thus necessitating a return to these Forests from time to time to catch the stragglers.

It is planned to follow the policy of completing the entered claims by Forests, and to have one party survey those claims that are more scattered. This appears to be the most logical and economical method of procedure.

New Type of Sawmill for Lodgepole Pine

by H. C. Hilton, Medicine Bow

Great difficulty has been encountered on the Medicine Bow National Forest in securing the sawing of logs into ties. For several years the cutting of sawlog timber was not required, such trees being left unmarked on tie sale areas. More recently, however, all sawlog trees have been marked and the cutting of such trees required. In several cases purchasers have left the logs in the woods rather than attempting to saw them into ties or lumber, claiming that such a practice was not profitable. Recently three mills have been sawing ties from the logs, but because of the large size of the mills, such sawing is rarely profitable.

The Forest Service has interested itself in this problem in an effort to find a mill of small size which could easily be moved from one location to another on sale areas. The American Sawmill Machinery Company of Hackettstown, New Jersey, manufactures both No. 1 and No. 2 Heacock Variable Belt Feed Mills, which are believed satisfactory for this use. They are sending the Medicine Bow one of the No. 2 mills without charge under the provision that the Fox Park Timber Company has agreed to pay the freight charges and if the mill proves satisfactory, the Timber Company agrees to keep the mill and pay the regular price. If not suited to the conditions, upon payment of the freight charges, the timber company secures the use of the sawmill for a sufficient length of time to demonstrate the suitability or unsuitability of the mill.

The Sawmill Company is interested in this proposition because of the possibility of selling additional mills in the West if this one proves satisfactory. An attempt to work out a similar arrangement with one of the manufacturers of caterpillar tractors is being made to secure motive power for the sawmill and also to demonstrate the value of tractors in mountain logging.

Aspen and Alpine Fir in Central Utah

By F. S. Baker, D-4

I hesitate to write this. Too many people already think central Utah forests are composed wholly of aspen and erosion, - but here goes anyway.

The oldest permanent sample plot in District 4 was recently remeasured on its eleventh birthday, and it showed some interesting things about aspen and balsam (Alpine fir). The plot was laid out in a stand of real fine first-class aspen, an even-aged stand 68 years old running about 500 trees per acre. This stand had an understory of alpine fir just coming in, hardly worth noticing, - 16 trees over 4 inches D.B.H. on the quarter acre plot. Now, eleven years later, it looks as though it would soon be a fir plot instead of aspen. In spite of the fact that the aspen stand is not old, and the site is very good, the stand on the plot has decreased from 133 to 106 trees in 11 years. The stand of alpine fir over 4 inches D.B.H. has increased from 16 to 33. The smaller stuff ranging down to 4½ feet shows a great preponderance of fir, there being 49 conifers to 4 small aspens. And grow! - you should see the firs put on diameter growth there in the aspen shade, - averaging .3 inch per year, while the supposedly thrifty aspen shows the magnificent average of .06 inch. The present annual increment on the plot is about 80 cubic feet (equivalent to somewhere about 300 board feet), of which 50 cubic feet is aspen an 30 fir.

The whole difficulty in aspen stands is getting coniferous seed to the area and getting the seedlings established. Once this is done, the aspen quickly gives way to the conifers.

WASHINGTON NOTES

Smith Riley, former District Forester of the Rocky Mountain District, and until recently forester of Rock Creek Park, D. C., is now with the Biological Survey. Mr. Riley is assistant in game conservation and will have charge of the 69 bird and mammal reserves.

Forestry Articles: Assistant Forester H. A. Smith contributed an article to the first issue of the Forest Club Quarterly (University of Washington) on "Should 'Public Relations' Receive a Place in the Professional Training of Foresters?"

Mr. Raphael Zon, Forest Economist, has an article in the same issue on "The Future of Forests Bordering the Pacific Ocean."

On the Road to Mandalay: According to the "Indian Forester" a battery of three Tiemann dry kilns is being installed at the experimental workshop at Rangoon, Burma. Research in the seasoning of timber is given first place in importance in their investigative program. Tiemann is now on leave in the Orient and recently left Australia, where he had been demonstrating kiln-drying.

FOREST PRODUCTS LABORATORY

Record Drying Study Class: The largest class in kiln drying so far held has started its two weeks of study. Eighteen men from a wide diversity of manufacturing lines are in attendance. A famous maker of clocks is represented, the largest tag makers in the world have a man here, a firm that faces the drying of 50 million wheel spokes next year sent their kiln men. Cedar chests automobiles, even bricks are among other products represented. The brick manufacturer wanted to learn the fundamental principles of humidity and drying control to apply to his product.

A Country Named for A Tree: Brazil is perhaps the only country named for a tree. For a century after its discovery the country's only economic importance lay in its exportation of a bright red wood which found great favor in Europe for decorative purposes. The tree from which this wood came was called in Portugese "brazil" or burning tree. As time passed, the land of the brazil tree came to be known simply as Brazil.

Mr. R. S. Hammatt, formerly of the Forest Service in California, now secretary of the California Redwood Association, spent three days at the Laboratory last week going over with Industrial Investigations the plans for the study of redwood about to be launched by that section. The redwood association has given $5,000 as a cooperative fund to finance this study. The objectives of the work lay in outlining the present uses of redwood in wood-using industries, and the discovery of new and unusual uses for the purpose of encouraging the use of redwood in those industries where its peculiar qualities are best adapted and to discourage its use where inferior and cheaper woods will do as well. The study will be handled by Mr. Dain.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Depository System of Wood Sales: Forest Ranger Wm. R. Warner has put into successful execution the following depository system on the Big Burros district of the Gila Forest. There is one main road entering the area from Tyrone and leaving the Forest about four miles below the town. Any purchaser using a wagon may deposit his wood anywhere along this road. All burro outfits must use the designated depository on Willow Creek and must work an area inaccessible to wagons. Each operator is furnished a numbered card which he places on his depository. This number is entered in the scale book with his name, and Friday of each week is established for marking and administration of sales. A definite route is followed and if the purchaser is not there his number identifies his wood. In case of overcut or irregularity, the number is taken and the wood left unscaled. This brings the purchaser to the ranger to learn the why. The reduction in administration is demonstrated by the fact that an extra man from November 1 to April 1 has been eliminated. (This is the kind of ingenuity that will enable the Forest Service flag to fly at the head of the procession after the public service organizations are tried at the slow acting bar of public opinion. You and I doubtless have no road in our job where Mr. Warner's system could be tried, but maybe we have even greater opportunity in some other form.--R.H.)

Forester in on Fire Call: Col. Greeley listened in on the Tusayan morning fire call at 8.00 o'clock, and said a few words to the men at the end of the roll call. On this call he was in communication with two primary lookouts, one lookout-fireman, two firemen and four rangers; in fact, all of the protective force on the Williams Division except one lookout-fireman.

Maguey Plant Trespass: Coronado surely has its troubles. When it isn't threatened by fires from Sonora, half wild thirsty native hordes from that State scud across the line and raid the southern ranger districts of Uncle Sam's Maguey plants. It is said that Maguey plants, from which the Mexicans manufacture the far famed beverages, mescal and tequila, are becoming scarce in Sonora.

Former Ranger Using Talent for Service: Bert G. Phillips, for five years a Ranger on the Carson and now an artist of some note and a resident of the Taos artist colony, is painting some drops or backgrounds for Forest Service exhibits. Mr. Phillips' interest in the Forest Service has always remained warm and he says that this opportunity to express himself on canvas for the benefit of forestry brings him real pleasure.

DISTRICT 5 - CALIFORNIA DISTRICT

LIONS: Recently while Robin Bauer was hunting stock on the Montague range, his dogs treed a mountain lion. He knocked it out of the tree with stones. After whipping the dogs, it again treed. Then, in order to keep the lion up the tree while he went for his gun, Bauer tied a dog at the foot of the tree and tied as much of his clothing as he could spare to the lower limbs. He returned a couple of hours later and killed the lion, which proved to be a female. Will say that Bauer earned the $30.00 bounty.

Last week while "Bill" Clark was repairing telephone line between Covelo and Dos Rios, his dog treed a lion. He followed the lion up the tree and partly stunned it with his axe. However, before he could get down out of the tree the lion was up and away. The dog put it up again within a short distance. "Bill" tied the dog to the foot of the tree, went to Covelo for his gun, returned in about 3 hours and killed the lion. $30.00 for "Bill."

Raymond Hill of Covelo went lion hunting on Blue Nose in January. Hill wanted his partner's boy, Stanley Johnson - 12 years of age - to learn how to ride after the dogs, and so took him along. When the pack found a hot track and started in full cry, Stanley proved able to give most old folks lessons. Anyway, when Hill caught up, he found a dead lion and a very proud boy who had shot the lion in the head when the dogs treed it. Stanley is now lording it pretty strong over the rest of the "fellows" at school.--Douglas Robinson.

He Wants Information: I take my Oliver in hand to write somethin which you might fillup a space with, and at the same time maybe someone would make explanation of what is asked and learn me somethin. I would like to know who is the bird who gets out these phoney questions what are sent out to poor rangers who got into the Service before you had to learn latin and Algebray and be a regular reader of the Lit. Digestion. One question I would like to learn about is - Under what circumstances can essential elements of progressive riding be required and how should they be defined?

After much study of the word book writ by noah Webster I don't get you. It says essential is volatile; highly rectified. Element is a ingredient or a substance which cannot be decomposed by any known method. Progressive is a adj. meaning improving. Define means describe the nature or properties of. Circumstances is state of affairs. Puttin all this into U. S. it sez - Under what state of affairs can volatile or highly rectified ingredients of improving riding be required and how should they describe the nature or properties thereof. How doya get thataway?

Was the auther trying to learn sumthin or wuz he trying to learn somebudy else sumthin? If he knew what the question ment why didnt he tell himself. if he dont why dont he get a college prof to learn him instead of making all the rangers wear out the word book? I dont know but maybe this what you would call lease Majestic and if one of them Big boses rote that question I will doubtful get nocked for a row of ash cans, but I will take a chanct that it was one of them dollar a year clerks.

Service Bulletin

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THE LITTLE PARK FORESTS OF THE EAST

by
C. R. Tillotson, Washington

At the "Weeks Law" conference held in Washington during the latter part of April, a representative from one of the western states, "the land of big trees," made the remark, "Why spend good money in protecting the little park forests in the eastern United States; surely fires of no consequence can develop there." The man apparently was not aware, for instance, that New York's and Maine's timbered areas of 15,000,000 acres each compare quite favorably as to extent with Montana's 14,000,000, Idaho's 16,000,000, California's 17,000,000, and Washington's 17,000,000. As to vicinity to market and value per thousand board feet on the stump, our friend perhaps would not wish to draw any comparison.

During a recent field trip in the northeastern states, the writer spent some time in New York State, where one would naturally think that the forests would be about gone or at the most exist as isolated woodlots in which fires could not develop to large proportions. Two things were observed which were very striking by contrast. One was the large contiguous bodies of timberland practically at the door of New York City, in which some large fires developed last spring due to inadequate fire protection. The other was the large bodies of timber in the Adirondacks where, due to a very excellent protective organization, fires seldom reach large proportions. In Sullivan County, one fire last spring burned over 15,000 acres of land, and another burned over 10,000 acres. A glance at the map will show that any portion of this county is only two or three hours removed by train or auto from New York City.

In one case, the fire swept over land on which the growth was principally hardwoods; in the other case, pitch pine and white pine made up the bulk of the stand. Some of the white pine was virgin stuff. It might be added here, further, that a 4,000-acre fire occurred in the State of Rhode Island this spring. That sounds nearly as big as the state. In this particular part of New York State, and in Rhode Island, the fire protective system is not yet very well developed. Dependence is placed upon local town supervisors and, upon wardens appointed by them for the nucleus of the fire-fighting organizations. This system is not satisfactory at present and will not, perhaps, become satisfactory for a number of years. When fires of such an extent occur, it is quite evident that there exist extensive forest areas even in some of our oldest and most densely populated eastern states, and that funds can be spent to very good advantage in fire protection.

The Adirondack portion of New York State affords a very striking contrast in the matter of fire protective organization and in the results. Here the state maintains a complete protective organization. Very little dependence is placed in the local town firewardens, although they supplement the state organization. This organization is furnishing very nearly adequate fire protection to the region. The men are deeply interested in the work. They figure on saving minutes in getting to a fire. The towers are of good construction, well distributed, equipped, and maintained, and a great deal of rivalry exists among the observers as to who shall report a fire first. In consequence, fires are quickly reported and are simply not permitted to reach large proportions.

Anyone interested in fire protection will profit by a visit to the Adirondack region, for the system in vogue there to-day is "a very sweet one" and appears sound in so far as the essentials go. Some of our western brothers would also find a mark to shoot at.

The Apprenticeship of A Forester

By W. C. Lowdermilk, D-1

To what extent does the forest school graduate possess the professional attitude toward his chosen work? Does he not too often have the belief that his degree has made him a forester? Does he not too often believe that he is prepared to assume a directive or supervisory position in a forest organization? And is he always at fault in this? Are not the forest schools apt to instill these conceptions into his training?

But an M. F. does not make a forester, not so much as an M. D. makes a doctor. To be able to protect harvests and grow timber on a large scale requires a knowledge of the details of the operations--a knowledge with judgment that only comes with intimate acquaintance with the conditions on the ground, in the woods, on the sidehills, at the headwaters of streams. Unlike most professions, all there is to know has not been captured and confined between book covers, nor may he acquire the knowledge at several sittings. Instead of the field of study being well defined and localized, it is pioneering and extensive. The test of adaptation to and acquisition of the knowledge of growing timber is that of a forester. Should not forest schools withhold the degree of Master of Forestry until the applicant has demonstrated the fact that he has become such?

The student should labor under no delusions of his early fitness for managerial qualifications until he has become a forester in fact, until he has served an apprenticeship. Such qualifications may come with his developed status of forester. Previously, however, he must know how surgically to diagnose a log in scaling, how to best control ecological influences in working, how proficiently to dispose of logging slash on slopes, he must know the eccentricities and vagaries of fire in the hills, the working parts of the protective organization, he must know generally how to fit the productivity of a forest region to the needs of the commonwealth, and when he has a tested preference for the white Bergeman Currin or Cutter shoes then he may qualify as a forester.

The laboratory or workshop in which he has acquired this training is not fitted with retorts and test tubes, nor with typewriters and desks, nor with legal volumes, nor with pharmacopoeial containers, nor with surgical instruments, but it is provided - and how wonderfully - with a framework of storied rocks, encradling limpid streams, with long mountain slopes, with gorgeous views that only the hardy may enjoy, with solitudes of a Nirvana, with the angry outbursts of thunder, and with the smile of the sun, with the outworkings of mysterious plant succession to the anthems of feathered choirs, with the companionship of camp fires and the comradeship of red-blooded men. In these environments is the forester made.

Saving the Pennies

"Save your pennies, and the dollars will take care of themselves" was a lesson we had before us repeatedly in the old-time copy books. The need for such admonition is by no means past, and an application of it has been made recently in the Washington office in checking up the telegrams received from the Districts. This is what was found:

Three telegrams addressed to Washington were filed at 12:30 P.M. as day messages - this means 2.30 P.M., Washington time. Under the daylight-saving plan, the Washington office closes at 3:30 P.M. This fact allowed but one hour leeway for the dispatch and delivery of the three telegrams. They were delivere the next morning. As sent, the cost was $1.80. Had they been sent as night messages, the cost would have been 90 cents. But, better still, had the three messages been combined into one night letter - and this could have been done readily, for they were all from the same office and related to the same subject the total cost would have been but 36 cents, a saving of $1.44, without any interference with the work.

Saving the Pennies (Cont.)

To the foregoing could be added a recital of a number of similar instances where day messages were filed late in the afternoon at some western point which brought no earlier delivery than next morning, and which would have been accomplished just as well by a night letter.--P.D.K.

What is Dimension Stock?

By Arthur T. Upson, Madison Lab.

The sawmill man and the retail lumberman call their 2-inch and thicker plank, dimension; the wood user calls all miscellaneous and sundry small pieces of wood required in the manufacture of furniture, implement, handle, shoe lasts, etc., small dimension stock. With plank dimension, there has been some correlation of sizes to uses. Two by fours, for instance, are cut 18 feet long, so that they may be cut in two and used for 9-foot ceilings without waste. Either buildings are planned so that they will use 12, 14, or 16-foot floor joists, or floor joists are cut to those lengths so that they will fit such buildings. Thus, the lumber manufacturers and the carpenters, contractors, and architects have at least attempted to get together.

The situation is much different with the wood user. With the exception of a few progressive hardwood sawmill men, the wood user must buy this material which was manufactured for building-trade purposes, regardless of the fact that he wants small stock usually clear and carefully sawed. After purchase of such high-grade lumber or planking, seldom manufactured in sizes most suitable for his purpose, the wood user ships it to his factory, where he remanufactures it into stock of small sizes at great losses in raw material, transportation charges, and operating expenses. Thus, the lumberman produces material that the secondary wood user does not want, or can not use to the best advantage, yet must buy. Thus, the sawmill man and the consumer are nowhere near together.

It is unnecessary to tell Forest Service readers about the large percentage of lower grades of lumber produced, and the high-grade by-products wasted in the woods and at the hardwood sawmill. To those, however, unfamiliar with small dimension stock, it is of interest to know that practically all this stock required by the wood user can be produced in the shapes and sizes required from this low-grade lumber, so often unsalable in that form, and high-grade by-products wasted in logging and milling operations. With the object in view of bringing about more extended use of ready-cut dimension stock by the wood-using factories and its production from by-products of the sawmill instead of from high-grade lumber, as is now the usual custom, the Laboratory undertook a study of the small dimension stock problem.

A preliminary survey last year of the dimension stock field indicated that the industry most susceptible to standardization of its wood stock requirements, and to increased use of such stock, was the chair group of the furniture industry. The Laboratory's efforts have, therefore, been centered in that field. It has conducted detailed studies in 10 different chair factories of the United States, the objects of which were to determine the waste and cost incident to the production of small dimension stock from lumber at the factory. It has also collected accurate statistics on the requirements in small wood stock of the chair industry. The results of the first activity will show the chair manufacturer how he can obtain his raw material at the least cost. The second activity will show the hardwood sawmill man what kind of small stock he can manufacture as a staple salable commodity. The application of the results of these two activities will reduce the chair industry's annual half billion-foot drain on high grade lumber - possibly eliminate it. Hand in hand with these, the hardwood sawmill will then utilize more and more of its logs and lumber, and a step in conservation will be taken.

The Laboratory intends to cover all wood-using industries eventually. This fiscal year it will complete the necessary work for the chair industry. This means that it will have complete data on waste in using lumber for the manufacture of every style, design, and type of chair.

WASHINGTON NOTES

Isn't a short Bulletin - 8 pages - more interesting than a long drooly issue? Wouldn't it put pep into articles if we kept them down to one or two typewritten pages, double space? Bear this in mind when you write your next article or news item.--Ed.

Food for Thought: In every district, except District 6, the number of fires caused by brush burning during 1921 were larger in number than in 1920.

The record:

	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8
1920	47	13	13	8	40	100	27	0
1921	72	45	27	23	78	74	45	1

England's Forest Policy: To forestall a repetition of the timber famine of 1914-18, England is planning to plant to forests about $1\frac{3}{4}$ million acres of land--the bulk of it within the next 40 years, and the whole area within 80 years. In addition, steps will be taken to maintain or increase the yield from the 3 million acres of private forests that existed in 1914. Some $18,000,000 was set aside by the Forestry Act of 1919 for the first ten years.

This program, if carried out, is intended to supply the nation with timber for a three years' war.--W.S.

You Can't Keep the Poor Ones Down: Borings were taken in several hemlock trees, the losers in the struggle for existence in what was once a beautiful hemlock hardwood stand in southern New York State. Some 30 years have passed since the big sticks were cut out, leaving the decrepit ones to stand alone. But without the fight they have come into their own. The borings showed on an average a core of suppression 6 inches in diameter, 80 to 100 years old, with growth rings almost invisible to the naked eye. With the opening up of the stand, in 2 to 3 years, the thickness of the rings jumped to .15 of an inch, which has been maintained to date. The 6-inch runts of 30 years ago are now sporting diameters of 14 to 15 inches.--R.M.

FOREST PRODUCTS LABORATORY

Tiemann Returns to Laboratory: After completing a 26,000-mile journey involving an absence of ten months, Mr. H. D. Tiemann, kiln-drying specialist of the Laboratory, is back home. Most of this time was spent in Australia, but New Zealand was also visited, and Tasmania, the Fiji Islands, and Honolulu touched. Mr. Tiemann went originally at the request of the Victoria State Government to give advice in the kiln drying of native Australian woods. A series of ten lectures was given in Melbourne; also supervision of actual kiln drying, especially of eucalyptus. Similar work in West Australia and in New Zealand, to which places he was called by the local governments and sawmillers' associations followed.

That Mr. Tiemann's work, both in kiln drying and in the general forestry field, was appreciated is evidenced by a most flattering farewell reception given himself and Mrs. Tiemann in the Melbourne Botanic Gardens, which was attended by a number of local government officials with whom he had come in contact, as well as more than 200 friends and acquaintances.

Test Number 500,000: The hundred-pound hammer dropping from a height of 34 inches in the impact machine on the afternoon of July 6 crashed through Timber Mechanics' test specimen number 500,000.

Twelve years have elapsed since the beginning of the Laboratory and the adoption of the present numerical series in Timber Mechanics which, on July 6, saw the total run up to the really enormous number of half a million.

The mechanical properties of approximately 150 American species of wood have been determined and, incidentally, those of a number of foreign species during the running up of the number of tests to the half-million mark. And the work still goes on.

Ranger Bill Says:

'Pears like "efficiency" is gettin' to mean not how well you can do your work, but how successful you can "pass the buck."

Do you think if I stayed on the job another year or two I might get to see the D. F., asked Ranger Nat Forest?

My first fire this year burned over 100 acres while I was lookin' up the new regulations to see if I orto fight it.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Broadcasting the Forestry Idea: The District has secured cooperation in Denver and Colorado Springs in broadcasting a forestry talk by radio each Wednesday night, and in the series of talks the different phases of forestry work will be shown. Each talk takes from 5 to 10 minutes time and those who do the broadcasting seem quite willing to accept this sort of material.

Binoculars Recovered after Eighteen Months: On October 21, 1920, a pair of binoculars was stolen from a lookout station on the Black Hills Forest. Supervisor Duthie recovered them on June 12 from the cabin of a man named Harper Cleveland in Crook County, Wyoming, where he had gone accompanied by a U. S. Marshal, a Sheriff, and one of his Rangers, armed with a search warrant. The thief had kept these binoculars pretty well hidden, but he had been suspected ever since the theft and various evidence had come to light from time to time which kept alive the Forest officers' interest in the case. The successful outcome shows that it is worth while to tie into cases of this kind and follow them up. Cleveland is out under a $1,500 bail. Incidentally, they found in his cabin 50 gallons of mash and half a carcass of a deer so that it will probably go hard with him.

Forest Highway Program for Wyoming: District Forester Peck, supported by District Engineer Johnson of the Bureau of Public Roads, went to Cheyenne June 29 and met the allied forces from District Four for the purpose of reaching an agreement with the Wyoming State Highway Department upon additional projects for the Forest highway program.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Depository System for Wood Sales: Forest Ranger Wm. R. Warner has put into successful execution the following depository system on the Big Burros district of the Gila Forest: There is one main road entering the area from Tyrone and leaving the Forest about four miles below the town. Any purchaser using a wagon may deposit his wood anywhere along this road. All burro outfits must use the designated depository on Willow Creek and must work an area inaccessible to wagons. Each operator is furnished a numbered card which he places on his depository. This number is entered in the scale book with his name and Friday of each week is established for marking and administration of sales. A definite route is followed and if the purchaser is not there his number identifies his wood. In case of overcut or irregularity, the number is taken and the wood left unscaled. This brings the purchaser to the Ranger to learn the why. The reduction in administration is demonstrated by the fact that an extra man from November 1 to April 1 has been eliminated.

There are Worse Things Than a Salary: The latest development in grazing trespass is a case where demand for payment of damages was repeatedly returned unclaimed and an attempt at delivery by the local Forest Officer disclosed the fact that the trespasser was insane. The unusual serious conditions that have existed recently in the stock business are indicated by the large number of grazing trespasses coming in in connection with bankruptcies. We have one large case against an estate, where the permittee, reputed to be worth at least a half million, finally committed suicide through desperation at his financial condition just 20 minutes before parties arrived with $40,000 in cash to tide him through the crisis.

Help Wanted: Expert mechanic to repair the sprinkler of Jupiter Pluvius, which is reported out of commission from continued disuse.

DISTRICT 3 (Cont.)

Signs: Tabulation of costs for the sign shop which was operated this year has been made up. A total of 2,862 signs were produced. Total expense of the sign shop was $2,828.55, which makes the average cost per sign f.o.b. Santa Fe $.91. This is one cent per sign less than the year previous. The average cost per sign at destination was $.988. The largest number of signs was made for the Santa Fe (491), with the Carson (458) and Coconino (241) following. The Crook received the smallest number (49). The average per forest was 201.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

In Honor of the Forester: The District Office bunch enjoyed a very delightful picnic in Ogden Canyon last evening in honor of Col. W. B. Greeley. The picnic was pronounced to be an unqualified success, not only on account of the speeches, but also the delicious eats furnished by the Forest Service ladies - the drinks being furnished by the Forest Service men. Col. Greeley spoke entertainingly about the Forest Service in general and its aims and ideals. The District Forester and Mr. Finch, of the Bureau of Public Roads, also gave short talks, followed by different members of the District Office.

Mr. Frederick Brind, who has taken a stellar role in Drafting during the past five years, is leaving the Service to-day to engage in private business in Salt Lake City. Although 73 years of age, Mr. Brind is a superb draftsman and his maps and H.E.S. plats will long be remembered for their excellence. We shall miss him greatly as he has been a sort of "daddy" to the whole office during his stay here. His many friends in the District Office wish him the best of success in all that he may undertake.

Morse Returns from Kaibab: Mr. Morse returned to Ogden recently from a trip to the Kaibab, where he has been for the past two or three weeks in connection with insect control work. He states that about the last of May over 1,200 trees had been cut and the infested portion of the trunk peeled. The average diameters of the trees treated were between 28 and 30 inches, and the average infested length of the trees or that portion of the trunk which it is necessary to peel is about 40 feet. The work is progressing well, and it is expected that this year's funds will be expended and work closed between June 25 and July 1. It is hoped, however, that the Park Service will come through with about $1,500 for control work after July 1.

DISTRICT 5 - CALIFORNIA DISTRICT

Donates Recreation Area: Miss Mary B. Brittan has deeded to the United States over 300 acres of land surrounding Castle Lake and along Castle Creek in the Shasta National Forest as a recreation area for the use of the general public. This beautiful lake lies 9 miles west of Sisson and it is planned to develop the area so that it will be one of the most popular recreation spots in northern California. The county has made a survey for a new road to the area. Mr. Friedhoff will make plans for its development this summer, and hearty cooperation is promised by the people of Sisson and vicinity. In presenting this land to the public, Miss Brittan has made a lasting memorial to her brother, Wm. G. Brittan, who often enjoyed a summer vacation here during his lifetime. Miss Brittan and her brother are descendants of John Wesley Brittan, one of the pione business men of San Francisco. Through such generous donations as this one and Tahoe Camp, presented by Wm. Kent, we will ultimately be in a better position to serve the recreation-seeking public.

(The Solicitor has ruled that gifts of land can not be received except through Act of Congress. The necessary bill has already been introduced in this case.--Ed.)

In the Future He'll Know Better: The other day a fire occurred on the Shasta, and among others an ex-guard was asked to help fight the fire. He refused. On Sunday, June 25, he showed up in Sisson on his way to Klamath Falls. Within half an hour Supervisor Hall secured a warrant for him, located the J.P., court was held in the waiting room of the railroad station, and the ex-guard departed--a sadder and wiser man.

DISTRICT 5 (Cont.)

"All Good Things are Three": On the back of a little pamphlet issued by the Safety and Fire Prevention Department of the Los Angeles Chamber of Commerce, dealing with the Los Angeles traffic ordinances and rules of safety, the Forest Service has been permitted, through the courtesy of John D. Maxfield, to place thereon its message of fire prevention. These little pamphlets have been issued literally by thousands and will undoubtedly help a great deal, as they are in great demand by motorists, many of whom undoubtedly travel through our Forests.

The Southern Pacific Company has just issued a mighty attractive folder which is called "Outdoor Life in the Sierra." It is very well illustrated, several of the pictures being furnished by this office. The folder contains an excellent map of the Sierra region, at the bottom of which appears the following: "Remember the Forest Service Slogan"--"HELP PREVENT FOREST FIRES."

Through the courtesy of Edward A. Beals, meteorologist, the Forest Service is enabled to have printed on the daily weather reports issued by the San Francisco office the fire prevention message. These reports are published by thousands and will furnish a mighty good medium of fire protection education. Other stations on the Pacific Coast are being requested to have the slogan placed in their reports for the summer season.

The suggestion that our slogan be placed on the Weather Bureau reports came from Mr. William Shauer of this office.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Fire: Telegram from District Forester at Portland, Ore., dated July 18:
"Weather conditions extremely unfavorable. Large fire Oregon Herman Creek near Columbia Highway destroying timber scenic cliffs and other. Control cost several thousand. Cause brush burning. Trespasser sentenced jail three months. Large fires Snoqualmie West Darrington and Sauk. Estimate two hundred fifty men these three fires. Lookouts almost useless account smoke."

Selling Scenery: The Oregon Tourist and Information Bureau has issued a second edition of the Oregon Skyline map, since the first edition of 5,000 copies printed in 1921 had been exhausted. This map is distributed free, and the entire cost of printing was borne by the Tourist Bureau (a State-maintained agency) from data prepared by the Forest Service.

Scholarship Won: Forest Examiner Hanzlik received notice on April 26 that he had been awarded a scholarship for forestry study in Sweden, to begin in September. This scholarship is one of 30 awarded by the American-Scandinavian Foundation, ten each for study in Sweden, Norway and Denmark. Several American Foresters have won these scholarships, and an equal number of Scandinavian foresters have studied in the U. S.

Three out of the 30 are for foresters. Mr. Hanzlik applied for one of these scholarships a year ago or so and has just been awarded it. He expects to take a year's furlough and will sail in August, with Mrs. Hanzlik, for Stockholm.

DISTRICT 7 - EASTERN DISTRICT

Benefits Directly Accruing to Local People, as a result of the creation of National Forests and the development policies which it has been possible to inaugurate with the limited funds and other means at our command, are brought out in correspondence between Dr. Hermann Von Schrenck of St. Louis, District Forester Reed, and Supervisors Plymale and Vaughan of the Arkansas and Ozark Forests. Supervisor Vaughan points out that prior to the creation of the Ozark Forest in 1908, the average annual cash income of many of the settlers within and adjacent to the Forest was considerably less than $150. In 1910, through Service efforts, timber operators became interested in National Forest stumpage, and timber sale business steadily increased until the slump of 1920. Hundreds of settlers throughout all parts of the Forest were given employment at fair wages, and many who owned small, isolated tracts of timber were able to realize goodly sums from the sale of this timber, which would have remained unmarketable except in connection with the sale of the National Forest timber.

Construction and maintenance of improvements on the Ozark has added considerable amounts to the income of local settlers every year. No attempt has been made to list those residents who have been benefited in a financial way prior to 1921. A check of Ozark disbursements for that year discloses that 180 local men were paid more than $22,000 from improvement funds alone - an average of better than $100 each. A larger number were employed by the operators on timber sales. The payments of 1921 were much less than those of several years preceding, but because of the general business slump during the past year many of the Forest residents would have suffered for want of food and clothing had it not been for the Ozark National Forest in the role of a big, going, local industrial development.

Supervisor Plymale draws a parallel on the Arkansas situation, but stresses the use of local men as fire guards, the stimulation of the livestock industry, and better roads through the Forest which result in better homes, better education, increased property values and a higher standard of living.

Are All Technical Men "Teching?"

By C. F. Korstian, Appalachian Forest Exp. Sta.

To "tech" or not to "tech," that's the question, or was recently within the forestry profession - a question the answer to which depends upon the technical man's sense of proportion and interpretation of "service." The Appalachian Forest Experiment Station is addicted to "teching," both in and out of season, and here's one reason:

Last spring the Service received an S.O.S. call from one of the foremost furniture manufacturers' associations for assistance in the adjustment of freight rates with some of the southern railroads, some of which charged on a cord basis and others by weight. At first glance this appeared to be an imposing job "horning in" with a vengeance on the regular program, and it appeared to involve a sacrifice of important work. The temptation was strong to take refuge in regrets - "pressure of important work,""inability to comply with request," etc. However, the decision was made immediately that this was an opportunity for public service which should not be overlooked. It turned out that the actual job was one which did not require a large amount of brains--one which could easily have been done by a good woodsman--but it proved to be another case where the impartial opinion of a specialist was desired because of the force of conviction which it would carry. All that was necessary was to measure, scale, and weigh all of the carloads of logs available in the particular city where the work was done. The association was gratified when told a few days later that the average cord of 18 to 36 inch green yellow poplar logs weighed 5,186 pounds or at the rate of about 10,580 pounds per M feet, log scale. Incidentally, these figures were very close to those obtained previously by members of the association. Measured in actual data, the Service didn't get much out of it. We learned, it is true, that for this class of logs there is an average of 82.8 cubic feet of solid wood inside bark per stacked cord of 128 cubic feet. We learned also that the average weight per M feet Doyle rule of 77 cars of yellow poplar logs was 10,760 pounds and that forty cars of gum logs averaged 11,917 pounds per M feet, and that's about all. But--

As a result of one day of "teching" the Service has won some very cordial and influential friends and ardent supporters of the forestry idea. Did it pay? We think it did.

Service Bulletin

U. S. FOREST SERVICE
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THE MOST SOUTHERLY PINE FOREST IN THE U. S.

By Fred H. Miller, Southern Forest Exp. Station

Within 150 miles of the Tropic of Cancer there exists a forest of southern pine which has never been burned, which has never been grazed, and which grows on almost bare rock.

The Peninsula of Florida sends its extreme tip south to the 25th parallel of latitude, nearly to the Tropic of Cancer, thereby gaining the distinction of being the most southerly point of the continental United States.

The flora of the southern one-third of the peninsula is classed by botanists as semitropical. There is a prevailing idea that tropical regions support principally dense forests or jungles of hardwoods. Generally this impression is correct, but on the southern tip of Florida there is a stand of pure pine timber of large enough area to be of local commercial importance. This pine forest extends from Miami south to a point about fourteen miles south and west of Florida City.

Slash pine (P. caribaea) is the only timber species occurring in the forest.

The stand is unique, inasmuch as it represents the only considerable forested area in Florida not burned annually or as often as the woods will burn, for there are no cattlemen in this part of the state.

The land on which this forest grows is a long, narrow body of dry land ranging in elevation from 2 to 35 feet above sea level. It forms the barrier between the Everglades and the Straits of Florida. The land is of recent origin and is a rock ridge composed of oolitic limestone. Near Miami there is a thin coating of soil. Accordingly, this section has been cleared and used for winter home sites as well as for the cultivation of citrus and other tropical fruits. The extreme south end of the area is almost absolutely devoid of soil. The rock, however, is very porous and cut up by numerous crevices. It is on this solid rock that the extensive remaining forest of slash pine occurs.

The peculiar feature of the stand is the fact that growth is fair for the southern pine region, notwithstanding the apparent lack of soil. A tree 12 inches in D.B.H. and 60-75 feet tall can be grown in about 70 years. Furthermore, the area is fully stocked with trees, a condition existing nowhere else in Florida except in small isolated patches, which have escaped fire.

A few small portable mills are now engaged in cutting this timber. Clean cutting is practiced, but wherever an area has been recently logged reproduction comes in immediately and is so dense that it gives the area the appearance of an immature grain field.

The total area of this, the most southerly pine forest in the United States, was originally about 200 square miles. Much of the stand has now been cut. In the future the greater part of the area will be used for winter resort purposes as well as for the production of various fruits, but there will remain an extensive area on the solid rock outcrops which can and should be maintained as woodlot forest.

Romance in Equipment and Supplies

By Roy Headley

Who says there is no romance in Equipment and Supplies, or that there are no big, new opportunities to be found in old, familiar fields? Whoever he is that says so, let him go to Missoula, Mont., and consider the development of centralized purchase. The District office handles a $300,000 volume of business, furnishing supplies needed for fire prevention and fire fighting in District 1, and for roads and trails in Districts 1 and 6. Supplies for fire-fighting jobs are issued from stock on telegraphic order and replacement made from FF.

From careful tests made in the season of 1921, the District figures that its centralized purchases in that year saved $26,000. This saving is reflected in lower costs for subsistence of guards and laborers. Cost for subsistence came down from $35 and $30 to $25 per man-month.

All that glitters is not gold in centralized purchase, and District 1 is not making the mistake of forcing Forests to use the central purchasing agencies. Prices are quoted to Supervisors and Supervisors use the central purchasing machinery only when it is to their obvious financial advantage to do so.

For the season of 1922, purchases are being made directly from manufacturers which automatically cuts out the jobbers' and wholesalers' profit of at least 10 per cent. It is estimated that the $300,000 purchases made for 1922 would cost $350,000 if bought of retailers. One thing that helps in making the dollar go farther than it is in the habit of going is the discount for cash, amounting to from 2 to 10 per cent if payment is made within 10 days.

Mr. Bradeen has had many interesting experiences while breaking into this new game of large purchases. Manufacturers, at least manufacturers of food products, seem to be thoroughly sore on Government business--presumably on account of past experiences. When approached they do not want to do any business with us and in breaking through their prejudice Mr. Bradeen has had to sit for days on the doorsteps of men whose bid he needed to get.

One hot one told with straight faces by the men of Missoula is that the manufacturer who furnished split insulators for District 1 in 1921 worked two die manufacturers 24 hours without leaving their benches in order to attain the speed which the District had convinced him was necessary. The insulators were put in barrels while so hot that they were fearful lest the barrels would catch fire. The packers had to be dressed in asbestos suits while packing the insulators. There certainly is no doubt about the fact that these insulators were secured for $40 per thousand, while the bid of the usual contractor was $78 per thousand.

From the Service standpoint the cooperation of District 1 and District 6 in this centralized purchase is a most promising thing. District 6 sent a man to Missoula to participate in the decisions on brands, etc. If the men doing the purchasing in Missoula can give satisfactory service and retain the custom of District 6, it may be that the movement will grow farther.

Introducing the New Supervisor

(The following letter, introducing the new Supervisor of the Cherokee, was recently sent by the District Forester, D-7, to 244 users of the Forest, and to local public officers, merchants, and representative citizens. Names and addresses were inserted, and each letter was signed. Perhaps there is an idea in this for other Districts?)

"With business conditions throughout the Southern Appalachian region returning to normal, a greatly increased demand for timber products from the Eastern and Southern National Forests is clearly in sight. To assist in handling this new business, we have found it necessary to take away from the Cherokee Forest Mr. S. H. Thompson, who has served you as Forest Supervisor during the past year and a half, and assign him to work throughout the Eastern National Forest District as a whole, with headquarters in Washington.

'Mr. Carlton L. Perkins, who has been Mr. Thompson's assistant, takes charge as Supervisor of the Cherokee Forest to-day. Mr. Perkins is a trained forester, whose schooling has been followed by broad experience since 1910 in forestry and lumbering in commercial work and in the Forest Service. He is well qualified to take up the management of the Cherokee Forest where Mr. Thompson leaves it, and to develop the Forest to its greatest usefulness as a public property.

Introducing the New Supervisor (Cont.)

"This is written just to introduce Mr. Perkins as the new Forest Supervisor to you folks who are directly interested in the protection and use of the Cherokee National Forest. You will find him at all times ready to render efficient service, and to welcome your suggestions for improving the service locally. I hope you will give him and the men who serve with him the same hearty and friendly cooperation you have so generously given Supervisor Thompson during his work in your section."

Ancient Forestry Regulations

Conservation of the forests of America is not a new idea. After the discovery of America, Spain established in 1551 a code of laws called "The Laws of the Indies," in which the preservation of the forests is provided for with penalties for violation of the ordinances. It is interesting to note that the regulations were made applicable to private forests.--H.P.D., D-5.

"That the buildings given up on account of improper occupation shall not be destroyed, nor the forests or woods already planted be felled or laid waste, except they should be so extensively planted that the people can cut estovers; which shall be done so as to leave the two principal boughs on the trees, that they may grow again and never to cut the trees at the trunk or foot, allowing the smaller branches to remain for pasturage (L. 7, Tit. 7, Book 7), all which hath been extended to forests or woods belonging to private individuals.

"Also, in consideration of the utility of these public forests or woods, it hath been ordered: 1st, that the planting of trees should be attended to according to the quality of the soil, the old forests being preserved, and watches placed thereover; for which purposes the justices shall visit every year the said forests and take care that the penalties expressed in the ordinance be carried into effect, L. 15, Tit. 7, Lib. 7, which must be confirmed by the council, L. 13, Tit. 1, Lib. 7, Rec. (L. 2, Tit. 24, Lib. 7, Nov. Rec.) 2d. That the corregidors or magistrates, who should be remiss to the fulfillment of these laws, shall lose a third of their salary, L. 16, Tit. 17, Lib. 7, Rec. (L. 16, Tit. 3, Lib. 7, Nov. Rec.) all which hath been expressed more fully in the ordinances of the 7th and 12th December, 1748, which direct that no trees shall be cut without permission of the justices; and that for every old tree cut five young ones shall be planted; all felling or burning of public groves (alamedas) with walks, mountains, woods, etc., is forbidden; and it is ordered that every inhabitant shall plant every year five trees in the situations which should appear best to the corregidor; and not having them, acorns may be planted at his discretion; that the justices may take cognizance of this, and not the audiencias nor chauceries, with appeal to the board of works and woods. This ordinance was extended to the forests of private individuals by the cedula of the 18th October, 1763."

Laboratory De-inks Newsprint Successfully

By Edward P. Ancona

Solving a problem that first engaged the attention of a Danish paper maker as far back as 1695, the Pulp and Paper section of the Laboratory has just completed a commercial scale test in which 1500 tons of old newspapers were de-inked, proving beyond doubt the practicability of de-inking newsprint and re-making from the pulp a paper readily accepted by newspapers as standard. The process uses bentonite, a colloidal clay of volcanic origin found largely in Wyoming. The method was developed under commercial cooperation with a firm that first tried out the bentonite for this purpose, but lacked the knowledge of paper mill technology to obtain results. Sidney D. Wells, of the Pulp and Paper section, handled the project which has just been successfully concluded.

A conservative estimate indicates that in large metropolitan centers where de-inking mills could operate with an assured raw supply, 2500 tons of newspapers could be collected daily. Based on the daily consumption of newsprint throughout the country of 7000 tons, there is indicated a potential saving of one-fourth to one-third of the present consumption of raw material going into paper for news purposes.

A rather startling aspect of this revolutionary process is that affecting the forestry end of the deal. The saving of one-third of our present consumption of newsprint would mean the elimination of the cut each year on over 250,000 acres of fully stocked spruce stand representing 100 years of growth.

WASHINGTON NOTES

The Service Directory for last April went to press at the Gov't. Printing Office July 18. "Nuf sed!"

Col. Greeley is expected back from the West about August 5.

Assistant Forester Clapp started out July 25 on a trip to Districts 1, 2, 3, 5 and 6.

Dear Editor:
Sometime ago I inserted in your valuable publication a reading matter advertisement, the gist of which was that I yearned, nay, more than yearned, craved to go West once again--back over the old trails of my youth; to meet again certain well remembered old timers, to revive my aging years with the piping of meadow larks and to strengthen my memory of the sweet perfume of sagebrush and squaw carpet. Well, sir, I have just returned from the journey I was longing for--five weeks in California and four in Arizona and New Mexico, and I grasped the hands of old timers and heard the meadow lark in the spring of the year and quaffed the never-to-be-forgotten odor of sage and tarweed and saw Old Man Shinn's old blue horse, and now I am revived and young again; for the time being I am satisfied and content, and when the time comes that I am not I shall advertise again in the Bulletin--it pays.--"Eli" Eldredge.

FOREST PRODUCTS LABORATORY

A Railroad Tie with a History: hangs on a pair of pegs in the hall at the Laboratory. Bearing the weather marks of the passage of 51 northern winters and summers and scarred by the several styles and weights of rails and plates spiked to it during its long life, the tie is a permanent tribute to the durability of its species--northern white cedar, Thuya occidentalis.

The tie was first put in place in a short line running north from Milwaukee in 1869 and was finally retired from service in 1920. Two thousand more of its fellows were then still in use, but had about reached the point of replacement. Four changes of rails were made, each time to a heavier type; 1875, 1889 and 1902.

Forest Products Laboratory Man Invents New Dry Kiln: A greatly improved type of dry kiln has been invented by Mr. Rolf Thelen, of the Forest Products Laboratory. In this new kiln the direction of air-travel in a progressive blower kiln is periodically reversed, and temperature and humidity automatically controlled to an extent impossible in the present commercial types of progressive kiln. With this kiln there is air circulation past both broad surfaces of each board, reversible circulation which produces more uniform drying than from one direction only, and absolutely control of temperature and humidity throughout the kiln. Lumber can not only be dried more quickly but also more evenly with this type. Mr. Thelen dedicated his invention to the free use of the Government and the people of the United States.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Big Tie Sale on Medicine Bow: Bids were opened on July 5 for the West Beaver Creek Unit on the Medicine Bow Forest, which is estimated to contain 500,000 standard gauge railroad ties, 1,500,000 ft. sawtimber, 7,750,000 ft. mine prop material. The Fox Park Timber Company was the successful bidder at the prices of 13-5/8¢ each for ties, 50¢ per M for sawlogs, and 20¢ per C linear feet for props.

Planting on the Minnesota: The spring planting operations on the Minnesota National Forest were completed the first week in June, a total of 960 acres having been reforested at an average cost of $4.32 per acre. The largest plantation, one containing 600 acres planted with 3-year Norway pine seedlings, was established at a cost of only $3.59 per acre, which is the cheapest planting ever done on the Minnesota Forest. This makes a total of 1,560 acres of denuded land that has been reforested on the Minnesota Forest during the fiscal year. A reconnaissance completed last fall shows about 7,000 acres more to plant.

DISTRICT 2 (Cont.)

Fishing Bulletins: The Office of Public Relations is giving to the press a list of all streams in Colorado and Wyoming in which there is fishing and a summary of the conditions of the streams and kind of fish which it is possible to catch. We have had much favorable comment from people regarding this little service and the papers ask for it and feature it prominently for the use of the public. A form is filled out on each Forest each week and submitted to the District Office in time for publication in the Friday papers. The information is sent in by the Ranger a day or so in advance of its transmission to Denver and is, therefore, live news when published. This is the fourth season and the demand is growing.

Ranger Bill Says:

Super. Jim says he's glad to know that Operation has objectives - he thot they was all objections.

Speakin' of hard jobs, did you ever try to thank the Boss for a raise you've been expectin' for years?

After all's said and done, there's only one kind of time that counts in gettin' to a fire, and that's "in time."

DISTRICT 3 - SOUTHWESTERN DISTRICT

What is a Grazing Man? To one who is not a grazing man and knows it, it sometimes looks as if the average forest officer knew a whole lot more about stock than he knows about range. The average field man can ride past a bunch of cattle and read a pretty complete story of their past doings, present condition, probable future action and the method of handling that has influenced all three. But can the same average field man ride over a range and read an equally complete story of its condition, history, future tendency and the method of handling which has influenced these things? Usually he can not. This man who can visualize with marvelous completeness the life story of an old cow has often only a very dim and incorrect image of the life story of the country on which that cow was born and has her being.

Drouth on Jornada Range Reserve: Conditions are very critical over the Jornada Range Reserve and adjoining areas. This region did not share in the good rainfall which visited a large portion of the State last year and only a few local light showers have hit so far this season. Three freight wagons are plying between Las Cruces and the Reserve, hauling feed for the weakest cattle. Heavier losses have been checked up already than occurred any year during the drouth which ended in 1918, and for this immediate section of country stock and range are perhaps in worse shape than for a number of years.

Fire Situation: Although there have been local showers on most of the forests of the district, no general rains have occurred except on the Lincoln. The fire hazard has been considerably reduced, though, and there are now no serious fires burning. The Arizona forests have had 203 fires to June 30 and the New Mexico forests 197. The Datil has been the hardest hit forest with 71 fires. Then comes the Coconino with 52, the Santa Fe with 35, Gila 34, Apache 33, while the rest have all had less. To control these fires the District has spent $26,277 from the fire fund. Of this amount, Arizona has used $4,241 and New Mexico $22,036. The largest fire has been on the Datil, 12,000 acres. The Gila has had the most expensive season, having spent just about one half of the District fire fund.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Another Honor for Colonel Greeley: Of course we all know that our Forester is a "big man among big men," but the incident at Globe has nothing on the honor bestowed on the Forester while on the Uinta. While the Colonel was on the Uinta only three days, the title of "Bishop" was bestowed on him, and we wonder what higher honor could have been bestowed, considering the short duration of his visit.--W.M.C., Uinta.

DISTRICT 4 (Cont.)

Baker Returns: Mr. Baker has just returned from a trip through northern Idaho, where steps were taken to begin something that will lead to a better forestry law for Idaho. A conference was held at Moscow, Idaho, at the School of Forestry with Mr. Theodore Shoemaker in charge of Public Relations in District 1, the faculty of the School of Forestry, and Mr. Ben Bush of the State Land Board. The situation was gone over thoroughly and a committee is to be appointed, including various interested parties in the State of Idaho, who will endeavor to formulate an improved forestry law. Nothing very definite can be done by this committee until fall, but the Forest Service will start at once a campaign to interest the public on the subject and to show them the necessity for taking some steps in this direction.

Conference Held in District Office: Mr. Basinger and Mr. Armstrong, representing the Union Pacific Railroad Company, State Highway Commissioner Lund, and Mr. Jones of Cedar City had a meeting with the District Forester and the Forester in the office yesterday. Their principal business was to ascertain what the Forest Service is doing or is planning to do in the way of development in the Bryce Canyon and Cedar Breaks Sections, and to get information about the erection of hotels to accommodate the tourists visiting these regions.

DISTRICT 5 - CALIFORNIA DISTRICT

Angeles Notes: Los Angeles County has just purchased 500 acres of timberland in upper Swarthout Valley on the Angeles and proposes to improve it as a free public camp.

The southern branch of the Sierra Club has given us funds with which to construct ten very neat looking, large bulletin boards to be placed inside of hotels on the Forest, and on these bulletin boards we will place maps of the adjoining country, game laws and fire literature.

Owners of private lands within the Angeles are commencing to follow the example of the Service, and at the present time at least ten tracts are being subdivided into summer residence lots and sold from $25 to $3,000 per lot. The higher priced lots are furnished with water and sewerage systems.

Los Angeles County has given $16,000 to be expended upon improvement projects on the Angeles.

High Lights on the Forester's Visit: Arrived Wednesday morning after a three-weeks' trip over the Forests of the Southwest. Spent four days at the District Office. Had interviews with the President of the American National Livestock Association, the President of the California White and Sugar Pine Mfrs.' Assn., Secretary of the Sierra Club, Managing Editor of the SUNSET MAGAZINE, and reporters. Gave encouraging and interesting talk to members of the force. Discussed in great detail the work of each office. Was particularly interested in road program and finances of the District, the plans of the District office men for field work, cooperative fire program, range appraisal, proposed methods for simplifying grazing procedure, public requirements and our marking policy, public relations and recreational work, results of our land classification and settlement policy, etc., etc. He promises us that he will endeavor to arrange a schedule next year so as to spend a few weeks in the field. During his trip in the Southwest he visited eight Forests and met about forty members of the field organization. The Forester's visit was greatly appreciated by us all.--P.G.R.

DISTRICT 6 - NORTH PACIFIC DISTRICT

The Advantage of Writing in English: It is good to get tangible evidence of the worth-whileness of publicity efforts. The following is taken from a letter to Mr. T. T. Munger, written by one of the most prominent lumbermen on the Pacific coast:

"Recently I have read in the Lumber World Review your article in regard to the Forest Service method of handling Douglas fir. You no doubt know I have made somewhat of a study so far as a layman is concerned of forestry, and last summer in Europe I spent considerable time on this subject. For years I have read a great deal written by different members of the Forest Service and I want you to know that I have never read such a splendid concise statement of forest conditions as is contained in your recent article in the Lumber

DISTRICT 6 (Cont.)

World Review. You say what you do say in understandable language and what is more, I have learned more from the reading of your article than I have from any article I can remember having read on the subject of Forestry."--E.E.C.

On Alibis: A few days ago a little sawed-off specimen of humanity called at the Deschutes office and asked our lady clerk in a high pitched voice, "Is the gentlemen in?" She replied that there were several in, but she thought it a case for the Supervisor, so she sent him in. He stated that he had heard that we were going to spray the trees in the Forest this year and that he wanted the job. We were somewhat flabbergasted, or something like that, but we managed to repeat the old time honored formula--"Well, we haven't received our allotment yet, but I will put in your name on the list and let you know later."--F.V.H.

DISTRICT 7 - EASTERN DISTRICT

Shooting Up a Forest: The R.O.T.C. of Virginia Military Institute of Lexington, Virginia, utilized a sparsely settled portion of the Natural Bridge National Forest for ten days this spring as an artillery rifle range. The camp was located in Robinson Gap Hollow, two miles from Buena Vista, and the battery of four three-inch guns was placed near the top of a ridge overlooking the camp. Firing was done at a 2½ mile range toward a sparsely timbered area with slide rock on the side of Bluff Mountain. Shrapnel shells were used. About 125 cadets received instruction during the practice and the officers in charge were well pleased with the location of the camp and the cooperation of the local Forest officers.

In issuing the permit for this use the Board of Visitors of V.M.I. assumed full responsibility for any damage. An examination of the shelled area shows that practically no damage was done to the timber. It was found, however, that the shrapnel shells are a fire menace, as fire broke out twice during the range practice, but was promptly controlled by companies of cadets detailed for the purpose. This permit was granted with some misgiving on the part of the local Forest officers on account of possible damage, particularly from fire, but the spirit of cooperation manifested by the officers in charge demonstrated the fact that this use can be continued. The wireless instruments which were used in connection with the direction of the firing were found to be equally serviceable in directing the work of controlling the small fires which occurred.

Nature Lavish in Seed Production

By J. A. Larsen, Priest River Exp. Station

In a general way foresters know that Nature provides abundantly in the way of seed production for the regeneration of our forests. It is doubtful, however, whether they realize even approximately the stupendous quantity of seed that is produced. The study of reproduction by seed stored in the duff conducted by the Priest River Experiment Station in the white pine type of northern Idaho gives some actual figures.

At fifty-foot intervals on two strips through the forest, a total of twenty-six samples of duff were collected. Each sample, comprising the top duff layer two inches deep and two square feet in area, was taken in separate sacks to the laboratory, where the contained seed was sifted out and counted. A representative portion of the seed was later sowed in the greenhouse to ascertain its germination per cent.

On one strip the total number of seed recovered from the duff amounted to 1,286,900 per acre; on the other strip it amounted to 3,618,200 per acre. Altogether, seed from eight species were found in mixture. In the case of the second strip, the number of seed per acre by species amounted to 2,978,000 for western red cedar, 301,700 for western white pine, 184,300 for white fir, 134,000 for western larch and less amounts for the remaining species in mixture. This seed, of course, was the accumulation of several seed producing years.

The wonder is what happens to this amazing quantity of seed. As shown by germination tests, a very large part of it early loses its vitality. In the present case, greenhouse tests established a germination of 11.8 per cent for the cedar and 12.7 per cent for the white pine, with germination for the other species less than 4 per cent. The actual germination of this seed on the forest floor after cutting is not known, but using these germination per cents there would have been 351,400 cedar seedlings and 38,300 white pine seedlings per acre.

After germination, however, another heavy toll is taken. Permanent sample plots show that the loss by death of white pine seedlings on the most favorable sites amounts to over 50 per cent in the first two years after germination. No definite figures are available for cedar, but it is known from observation that the seedling mortality of this species is exceedingly great, being in some cases almost a total loss. With such heavy losses before a stand of about 5,000 seedlings can be finally established, it is possible to comprehend such stupendous figures of seed production as several hundred thousand seeds per acre for the large-seeded species and several million per acre for the small-seeded species.

We Have It - A Game Utilization Plan

By J. C. Roak, Kaibab

Some three years ago, not now, came the Kaibab reporting game animals in such numbers as to cause damage, also recommending disposition of 500 bucks, tentative figures, low enough so as not to cause alarm, but more can be taken without harm. To kill the deer here, figuratively, would be like killing a beef and in almost 90 per cent of the cases would actually be that, as deer and cattle run together and undoubtedly many cattle would be killed. It is wondered, what about persons? Who would be brave enough to go on the Kaibab along with the 499 hunters?

The Kaibab is unique, an island of yellow pine with a fringe of woodland in a sea of desert, cut off on practically all sides by almost impassable canyons and long stretches of desert so that the drift of deer is not great and would become little greater if the deer were stirred up. Also, take notice the Kaibab is in Arizona, not very accessible to most of the State (some 100 resident hunters) but easily accessible to Utah. And again, Arizona has a $20 nonresident license. Who then would kill the Kaibab deer in an open season if this was advisable, which it is not, unless there is some change in the Arizona law, or better, that the matter is handled under Federal law.

Why not a season with guides to accompany hunters, hunters to pay Federal license and cost of guides and State license if necessary, so that men and cattle will not be killed or wounded and also prevent untold numbers of deer being wounded? Again, why not any other surplus as should be removed be killed under government supervision if not by the government itself and shipped to market? Chance for some revenue and most certainly legitimate revenue as the Forest Service alone is responsible for the number of deer on the Kaibab. That is our plan, why not?

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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D-6 IN ITS HOUR OF TRIAL

By Geo. H. Cecil

I have just (July 24) returned from a trip to the State of Washington, in the course of which I visited all the sections of the State, with the exception of the country north of Seattle. Everywhere I found the situation extremely critical. On the west slope of the Cascades there has been practically no rain since early in May, while on the east side the last precipitation occurred some time in April. This, however, is not the most disturbing factor. During the month of June a great many of the operators attempted to burn slashings and undergrowth in dangerous situations, counting on the usual June rains to extinguish the fires. The June rains did not come, and instead we had a period of heavy winds. As a consequence, the fires that would ordinarily have been extinguished gained headway and in some cases grew into great conflagrations. For instance, the fire on the Cedar River near the Snoqualmie, which, while it did little damage inside the Forest, burned over ten or fifteen miles of country in the course of one afternoon, burning eleven donkey engines, other logging equipment, and property.

In the neighborhood of Darrington a fire started by a settler to burn slashings spread over a wide area of cut-over lands of the Sultan Railway and Timber Company and was communicated to the Forest where a crew was fighting it. Many other fires have occurred on the west side outside the National Forests. While in Seattle I saw a list of the logging companies who had had fires and, as Mr. George Long remarked as he read it, it looked more like a directory of the logging industry. Practically every camp of any consequence in western Washington has had heavy fires with loss of equipment and timber. This situation is particularly serious, since the heavy pall of smoke has practically put our lookouts out of commission over the two States. The drift of smoke in western Washington and fires which have been burning on the east side of the Cascades in the Chelan, Rainier and Wenatchee country have brought about a condition where it is impossible for the lookouts to see over a mile or two. Under these conditions fires can burn several days before being discovered and this is the great danger at the present time. Our men have been on the job and have caught a great many of the small fires, particularly those left by campers, although I must say that I believe the campers and those frequenting the woods have been more careful than ever before. I think we are now reaping, to some extent at least, the results of the publicity work we have been doing in fire prevention for the last ten years.

The only redeeming feature of the situation so far is that we have had practically no lightning storms, with the exception of one or two on the Colville and Umatilla.

The situation in Oregon, while I have not been over the country personally, is very largely the same as in Washington. So far we have had no serious fires inside the Forests except the one now burning on the Oregon. This fire was started by a settler burning brush, which escaped from him under a heavy wind, and has now spread over approximately three thousand acres in the vicinity of the Columbia Highway. It is being fought by a crew of from 100 to 175 men. The country is extremely rough and broken and it is almost next to impossible to extinguish the fire without the help of rain. It is being held now on the south and west, and has burned to the Highway on the northeast end, and on the southeast end to an old burn in the Mt. Defiance country. At present it is doing little damage, but will be a menace until we get rain in the fall.

I regret sincerely that it has been impossible to secure airplane patrol this season, since right now, with the lookouts out of commission, would be the time when the airplane would be of the greatest benefit to us. It is planned, however, to avail ourselves of their services on reconnaissance work and after lightning storms.

Operation Insists on Being Heard

The unfeeling Editor published in the July 17 issue only the Administration section of Operation's objectives and administrative work plan. Under the threat that Operation men will all cancel their subscriptions unless they get their names in the paper again, the Editor has agreed to run one more of the sections of the Objectives and Administrative Work Plan.--R.H.

Personnel

Objectives in Personnel

1. Closest practicable approach (cost considered) to the following specific objectives in the Forest Service:

   (a) Most helpful and stimulating incentives and environment for each member of the Service.

   (b) Responsibilities, functions and jobs of both individuals and units clearly defined after analysis and test.

   (c) Definitions of responsibilities, functions and jobs thoroughly understood by all concerned.

   (d) Each job filled by the best qualified and best trained person to be found for the salary available.

   (e) Best ways of finding best qualified recruits worked out and installed.

   (f) Actual salaries fixed at amounts which will produce greatest net public benefits.

Administrative Work Plan for Personnel

1. By January 1, record, digest and interpret the facts, ideas, questions, etc., encountered during the season, which bear on the attainment of the objectives. Kelley, Kelleter, Anderson, Headley, responsible. Employees' Committee cooperating.

2. Make a study of training and give all possible support to any efforts at betterment of training. Peck, Kelley and Headley responsible.

3. Continue to help (a) develop the principle of accountability, (b) determine how it should work in specific instances, and (c) make it the permanent tradition and force it should be. Every member of branch responsible in his or her own field.

4. Protect interests of Forest Service in reclassification and efficiency rating activities and develop our own practice in this connection. Push promotion and reclassification measures at every opportunity. Anderson and Headley responsible. Employees' Committee for Washington Office and Service Committee on Efficiency cooperating.

5. In contacts during the year with field men of all classes, systematically discuss the personnel paragraphs of the proposed Administrative Manual, in order that the subjects may have the fullest consideration before the District Foresters' committee reaches its conclusions in the spring of 1923. Kelley, Anderson, Kelleter, Headley responsible.

Why The Rope Didn't Cinch

District 4's Remedy

By C. D. Simpson, D-4

The item by Ranger Geo. D. Russell of the Ozark National Forest in the Service Bulletin of April 3, 10 and 17, 1922, entitled, "The Rope that Didn't Cinch," wherein he belabors the western Districts and calls upon them to divulge their legal recipe for conviction of fire offenders, deals with a subject of first importance to all field officers.

District 5 appears, as Mr. Russell says, to be a pioneer in law enforcement, and has developed to a high degree its personnel in the generally recognized principles of criminal detection and investigation.

District 4 has also had a measure of success, and this opportunity is embraced to point out what appears to have been the wrench in the machinery in Ranger Russell's case.

If the facts are understood aright, no arrest was made in this case by the investigating officers in February when the fire occurred, but the Ranger submitted his report through the usual channels and the case was reached in the Federal Court in November.

The Manual says, Instructions under Regulation T-1 and 2, that the local forest officer, when a fire occurs, if he has convincing evidence that the same was of incendiary origin, may arrest the supposed offender or secure a warrant for his arrest if there is reason to believe the offender will escape. Instructions under Regulation T-10 are of like import. In this case, since it appears that the Forest officers did not catch the offender in the act of setting these fires, it would have been necessary first to have procured a warrant from the nearest United States Commissioner, or from a State committing magistrate under section 1014 Revised Statutes. This, it seems, could have been done without delay, as doubtless there is a magistrate within a day's, or less, travel from the fire. Had the offender been promptly arrested, taken before the magistrate and placed under bond to appear in court before, as appears in Ranger Russell's case, he had opportunity to confer with his friend, "an avowed woods-burner," it is likely that the result would have been different. Or if the offender by reason of immediate action found himself in the clutches of the law, perhaps the advice of his incendiary friend that he could not be convicted without two eye-witnesses would not have made so forceful an impression upon him. It is, of course, elementary that there is no such rule of law. Many of the most famous convictions in the history of the criminal law were secured upon circumstantial evidence alone.

As the Manual says, "When a fire occurs the most important consideration is to put it out." Scarcely less important is it to apprehend the offender and secure his conviction. There is no royal road to the latter except immediate action. The moment (after the fire has been extinguished) that the Forest officers are convinced they have found their man, by all means he should be taken before the magistrate before he has an opportunity to confer with his friends and get their moral, if not other, support.

There is another important consideration. After an offender has been taken before the magistrate and bound over for the action of the court, then is the time to remember that it is well not to demand the pound of flesh. In other words, if, when an offender finds that he is in the hands of the law, he desires to make an offer of settlement, as most offenders in such circumstances will wish to do, any reasonable offer should be recommended to the United States attorney. It is better to settle ten cases on the basis of conservative tendered fines than to prosecute ten cases relentlessly with the result that perhaps one very severe penalty will be imposed and the other nine offenders will get off. In this it is assumed that the charge will be brought under Regulation T-1, an offense against which is a misdemeanor. If brought under Section 52 of the criminal code, a felony would be involved and a compromise could not be effected as above suggested. We seldom invoke Section 52 of the penal code by reason of the severity of the penalty and the consequent difficulty of securing a conviction in a small case. It would be different in the case of a great conflagration of incendiary origin.

It is true the instructions in the Manual authorize an arrest by the local officers apparently only in wilful and flagrant cases where immediate action is necessary in order to protect the Forest from damage, or to prevent escape of trespasser. The Ozark case appears to have been wilful and flagrant. It seems that in the last analysis the local officers must, within reasonable bounds, be the judge as to whether immediate action is necessary to protect the forest from damage, - whether damage by repeated fire setting by the particular offender, or whether by reason of the latter escaping his just punishment others of his kind will be encouraged to follow their natural bent and indiscriminately set fires. While the expression in the Instructions in the Manual with reference to the escape of trespasser has reference perhaps to his bodily escape from the jurisdiction only, it is equally an escape, however, for all practical purposes of administration, if by reason of long delay in prosecution of the case and opportunity to establish numerous alibis, the defendant when he finally is brought into court months later escapes a just punishment.

Experience has demonstrated that unless the fire-bug can be brought to justice immediately and made at once to realize the power of the law (as is the practice in all other branches of the criminal law) at best, a very indifferent result will attend our efforts. [illegible]

In the foregoing it is not intended to lay down any compulsory rule or course of action for the Districts. The Service Bulletin, as understood, is a forum for the exchange of views, and it is in this spirit that an attempt is made to answer your item "The Rope that Didn't Cinch."

WASHINGTON NOTES

The Directory of the Washington office, just issued, shows that 243 people, including the District office personnel of D-7, are employed at this headquarters.

National Forest Receipts for the fiscal year 1922 totaled $5,068,527, an increase of $2,563,592 over the previous fiscal year. Receipts by districts were as follows:

District	Total receipts	Increase
1	$631,483.49	$161,065.40
2	800,335.45	462,872.09
3	899,923.79	621,730.79
4	902,172.77	701,229.05
5	769,259.76	245,612.64
6	866,532.54	368,236.84
7	153,076.22	21,794.17 (decrease)
8	45,743.40	24,639.56

Grazing, by reason of deferred payments, etc., showed a net total increase in receipts of $2,493,941. Timber sales finished, as predicted, with an increase of $85,610.

FOREST PRODUCTS LABORATORY

Forest Products Research in Pictures: A new series of material, similar to the technical note idea, is being sent out periodically from the Laboratory. These are news pictures put up one in a folder, with descriptive title, ready for reproduction. The service is being given to periodicals, each picture being sent to the field in which its subject matter puts it. Number two of the series, a picture of the new box testing machine in the Box Lab, is going out this week.

Sap Stain Serious Problem: A sap-stain scouting trip through the south by E. E. Hubert of the Office of Forest Pathology has revealed conditions more serious than had been realized. While sap stain, or blue stain, is usually superficial in that it does little or no damage to the strength properties of lumber, the strong prejudice in both domestic and foreign trade for the clean, bright color of unaffected lumber militates heavily against stained stock. Ten to twenty-seven dollars loss in price on a thousand feet is recorded in the sash, door, and millwork field, while degrade in blued gum causes losses of as high as $15 a thousand. The data gathered will be used in planning an extensive study of the whole problem.

A Historical Fragment of Wood: A piece of siding from an old Quaker meeting house located near Easton, Talbot County, Maryland, sent in by the forester's office, has been identified as white pine. The meeting house is said to have been built about 1680, although there is evidence that it was once resided.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Can Sage Hens Be Raised in Captivity? For a couple of years the District has been trying to get some sage hens eggs for a party who wished to incubate the eggs experimentally under hens, in cooperation with the State Game and Fish Department of Colorado. Forest Supervisor Blackhall of the Hayden has at last been able to secure them, and two settings of 18 eggs in all have been sent in. The experiment is being followed with a great deal of interest for the reason that Dr. Matthews of Denver, who is conducting it and who has successfully done a great deal of this sort of work with other species, regards the sage hen as the king of the Gallinaceae, and he feels that unless something is done artificially with this species, it will soon go the way of the carrier pigeon.

Grazing Delinquents: What are we going to do with a few delinquent grazing fee cases for which no sort of settlement has been possible, is a question that is worrying some Forests and certain members of the District Office. It appears now that there are bound to be some cases where no settlement at all will be possible for the simple reason that the parties are absolutely broke and "down and out." We might bring the usual trespass procedure, but the question arises, what will that avail when the party simply has not got it and has no possible means of getting it? A black list has been suggested for such cases which will prevent them from any future consideration on the Forests for any purpose until these obligations are met.

Shake-Up Among the Supervisors: Supervisor Tinker of the Bighorn has been transferred to the District Office as Assistant to M. W. Thompson of the office of Forest Management; John W. Spencer, Supervisor of the Battlement, is transferred to the Bighorn; Ray Peck goes from the Routt to the Battlement and Wallace Pearce is promoted to Supervisor of the Routt National Forest.

Ranger Bill Says:

Its sure a pleasure to be able to dot an "I" without havin' it approved by a half dozen Branch Chiefs, remarked our Forest Examiner just back from Washington.

Makin' two hearts beat as one ain't nigh as important these days as makin' a salary check pay for two.

Before gettin' too chesty about your promotion, you'd better remember all those chicken dinners I cooked for the Super., says my wife.

DISTRICT 3 - SOUTHWESTERN DISTRICT

The Forester on Work Plans: Field officers will be interested to know that Col. Greeley had a very high opinion of the work plans now being used on the Forests of D-3. In commenting on the Carson Plan, he stated that it was one of the best plans he had seen, but made the suggestion that there were probably more jobs listed than could be tackled during the year, and in order to avoid scattering efforts it would be advisable to mark the particular jobs having priority in the event that part of them had to be dropped temporarily. This is a very important point which all field officers will do well to keep in mind.

Col. Greeley also pointed out the desirability of steering clear of listing activities to the exclusion of actual jobs. For instance, "Range Supervision - 40 days" is an activity, not a job; but "Spring Range Inspection - 10 days," "Determining Drift on Spring Creek Allotment - 5 days," "Fall Range Inspection - 10 days," are jobs.

DISTRICT 3 (Cont.)

Testing the Lookout's Eyes: Aboriginal vision is still keen. Test points didn't bother this "first American." The lookout-fireman on Grandview Tower on the Tusayan this year is an Indian named Flyn Watahomigie. Early in the fire season, Ranger Kintner, while on top with his lookout, thought to test the lookout's eyes and at the same time find out how much he knew about the general lay of the country. A train was smoking at Anita and Kintner said, "Flynn, do you ever see train smoke at Anita?" "Yes, train there now, another at Coconino siding, and two at Grand Canyon. Must be specials running to-day." Then Kintner asked, "Do you see that big dust devil on the neutral strip?" "Yes, but those two over on Cataract are bigger and there is one down there on Peterson Park." Flyn passed on the eye test with a mark of 200 per cent.

Caught By His Own Fire: Crippled Mexican set fire that came near consuming him. On the east slope of the Pinal Mts., Loremo Limas sat on a log to rest. His locomotive powers were working on only one side, owing to the other side being disabled by paralysis. His burro grazed not far away. While the caballero rested, he knocked the ashes from his pipe. His first knowledge of anything unusual came through a warmth on his back of uncomfortable intensity. By dint of much shouting, some other Mexicans came to his rescue. They also fought fire valiantly, but in spite of their efforts, the Pioneer fire, as it is called in the records of the Crook, burned over about a hundred acres. The responsible person was taken before U. S. Commissioner at Globe, where he pleaded guilty - he could hardly do otherwise. Owing to his unfortunate physical condition and the effort he made with the help of the other men to put out the fire, he was severely lectured but no fine or other penalty was imposed.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Tie Operations on the Wyoming: The Standard Timber Company, operating on the Cottonwood Creek in the Wyoming National Forest, has produced in the past year approximately 375,000 hewn railroad ties, according to C. E. Brackett, Forest Ranger in charge of the sale. Of this amount 85 per cent are first-class ties, 13 per cent second, and 2 per cent are rejects. The year's cut is now being floated down Cottonwood to the Green River, where they will be driven down the river 90 miles to the loading plant at Green River City.

No Respecter of Rank: On June 29, Ranger James R. Ostler, of the Uinta Forest, found a party fishing in the Duchesne River, where notices had been put up by officers of the State Fish and Game Department, closing all the waters of the Duchesne to fishing until July 15. Ostler immediately took action, and asked the fishermen if they could not read printed notices. They admitted that they could but contended that the notices were incorrectly placed and were not intended to cover those waters. One of the men was especially sure of this, as he was Governor Mabey of Utah. Ostler was from Missouri, however, and the party finally accompanied him to the Stockmore Ranger Station, from where the Governor telephoned the State Warden. He was quite relieved to learn that the Fish and Game Department had really made an error in the notices and that only the headwaters of Duchesne and Rock Creek were closed.

The Governor was a good sport, however, and complimented the Ranger highly in doing his duty in a fearless but gentlemanly manner, regardless of the rank or position held by the persons involved.

Venison is "Deer" in Summer: On July 12, 1922, Forest Supervisor Orange A. Olsen and Ranger Spencer H. Lawson inspected the Nicholia Canyon sheep range and stopped at the Dayton camp for dinner. The herder, Floyd Black, was out, and the Forest officers began to prepare dinner. The buzzing of numerous flies attracted their attention to a covered mound, and upon investigation a large, fresh hind quarter was found. Olsen and Lawson cleverly disappeared, but returned soon after the herder's arrival. Black was very hospitable and literally flew around to prepare the best his larder afforded, and apologized for having no meat.

After dinner, the Forest officers inquired regarding that nice big quarter of "full-blood" mutton, and the herder admitted having killed a three point buck. He was arrested and taken the next day to Dubois, where he was fined $100, and was informed that venison is "deer" in the summer time.

Why Man-Caused Fire the question as to why the increase in man-caused fires. On July 4, 7,200 people went into San Gabriel Canyon on the Angeles. Incidentally, the Ranger confiscated a small truck load of fireworks being taken in there. Ten years ago, fifty people in this canyon on such a holiday was a "crowd."

Big Lumber Company Comes into Fold: The District Forester and Mr. Kotok made a flying visit to McCloud on June 25, and with Supervisor Hall induced the General Manager of the McCloud River Lumber Company to reconsider his declination of fire cooperation. With the securing of cooperation from this company all the large holding and operating companies in California are receiving protective service from the Forest Service this year, except one which has its own fire protective organization.

They Call It Paradise: "Five Hundred and Sixty Acres of Land." That's the prosaic description given in the records of Los Angeles County of Camp McClellan, the county's new public recreation ground. But those who have already visited the spot call it Paradise, and they're not far wrong. Swartout Valley is the name by which Camp McClellan has been known in the past. It is about four hours' ride from Los Angeles, at an altitude of between 6,500 and 7,000 feet, and some of the points to be reached by hikers are 8,000 feet high. The county purchased this ideal vacation spot from private owners in the Angeles National Forest for the use and enjoyment of the public. Approximately one hundred camping sites will be leased at fifteen dollars per year to help pay interest on the county's investment. The rest of the property will be open to the public.

DISTRICT 6 - NORTH PACIFIC DISTRICT

All in a Day's Work: The following is quoted from a guard's diary on the Wallowa:

"August 3, 1921: Went after horses 4 A.M.; got back to camp 5 A.M.; tore down camp, packed up, moved three miles toward Coverdale R.S., pitched camp, went to work on new telephone line 8 A.M., worked until 6 P.M."

The Forests and the Railroads: A new edition of "Camping, Fishing and Hunting Guide, Western Oregon," was recently issued by the Southern Pacific R. R. The material in this guide is practically what appears in "In Vacation Land." The Southern Pacific issued this material in 1917, in a smaller booklet and asked this office this winter to revise the material, as the booklet has proved one of the most popular ever issued by them. Here is an example of one railroad beginning to realize that the National Forests are an asset to their lines and to be advertised as such. It is hoped that other railroads in the District may do likewise for the Washington Forests. There is no reason why railroad companies should not come to see that it means more business (both tourist and tonnage) to them to advertise National Forest areas adjacent and tributary to their lines. To get railroads to look at the matter in this light is one of the objectives of D-6.

DISTRICT 7 - EASTERN DISTRICT

On the Natural Bridge Forest the spring fire season was brought to a close with a record of but three acres of forest land burned over. This, according to the Lexington News, is a situation in marked contrast to what men of the country yet quite young have been familiar. Watching the fires in the Blue Ridge after nightfall, a startling and striking spectacle was the habit of Lexington citizens in the spring and fall until Government protection and ownership set in in the immediate past. Now, says the News, there is nothing rarer than a fire in the Blue Ridge, although in spite of all that man can do there are at times conditions in which destruction must ensue. The change for the better in the mountain slopes is apparent to even the most casual observer. The News also comments favorably upon the efficient fire protection in the region northwest of the National Forest which is being secured through the State protective forces. Supervisor Fahrenbach of the Natural Bridge and his men may well be proud of the effective protection work to which in a large measure are due the conditions bringing forth these highly favorable comments in the local press.

Information Furnished by A. J. Dalton and Mrs. Hattie Bearfield of Epperson, Tennessee, led recently to the conviction of General Hooper, also of Epperson, on a charge of setting fires on the Cherokee National Forest March 2, 1921. Hooper has just completed a jail sentence of sixty days. Payment of a reward of $100 each to the two informants has now been approved by the Solicitor, and vouchers are in line for payment. This is the only case of record in D-7 where such rewards have been paid by the Government.

Seed Production and the Natural Balance

By C. G. Bates, Fremont Experiment Station

I want to ask a question of the nature students of the Forest Service, if they may be persuaded to hearken for a moment to something besides the cougar's scream. It is this:

What part does the pine squirrel play in the life of the lodgepole forest?

Here are the main facts in the case:

The ten-year average seed production of a mature lodgepole forest on the Medicine Bow has been 72,992 good seeds per acre-year. On the Gunnison, where the climatic conditions appear to be more favorable to the fruiting process, the average production has been 320,053 good seeds per acre-year. To provide against any possible need, such as restocking after a fire, there are retained on the trees, at all times, the equivalent of 3½ to 4½ years average production, in the form of older cones.

Now, in neither of these cases is there any real, present need for seed, that is, there is no room in the forest for any new trees to speak of. In either case, a few thousand of these seeds may germinate each year, but perhaps a dozen at the most will ever make trees. I do not think anyone will attempt to refute the statement that a very large proportion of the seed crops merely furnishes food for pine squirrels and a few other rodents, though how much would be almost impossible to determine accurately.

It does not necessarily follow that because the pine squirrels exist in the lodgepole forests, they benefit the forest, yet it seems that there must be a reason for the production of so many times the actual number of seeds needed to reproduce the forest, and it seems possible that the squirrels are themselves a direct or indirect stimulus to seed production. We have to recognize that all of nature's forces are more or less perfectly in balance, and, in a case like this, that the existence together of the lodgepole trees and the pine squirrels is likely to mean reciprocal benefit. These are merely suggestions as to what the direct action of the squirrels may be; it is along these lines that more definite information is desired: (a) through forgetfulness the squirrel may effectively cover and plant one seed, while eating a hundred; (b) squirrels in moving among the branches and jumping from tip to tip may carry pollen and greatly assist in fertilizing the cone flowers; or (c) by feeding on the fruiting bodies of fungi, such as the large polypores, squirrels may greatly reduce the spread of disease. I do not know that they do this, though I know that mountain rats are very fond of toadstools and dry them for winter use. It would seem that any benefit of this kind would be offset by the action of the squirrels in carrying mistletoe seeds and rust spores.

Let's find out why the pine squirrel feels so important!

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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PERSONAL ACCOUNTABILITY

Is It or Ain't It A Beautiful Theory?

By Fred Morrell

Old timers in D-2 will remember a famous statement of George Philip Bard, made at a Supervisors' meeting back in 1912, that a certain presumably well-established principle in Forest administration was a beautiful theory. Bard said he liked to think about it and to talk of it, - it was delightful, - but that he wouldn't go so far as to say it was ever practiced.

The writer isn't going to make any assertion like Bard's with reference to the above subject because he knows full well that to even raise any question about it at all is going to invite a number of literary hard balls in his direction, and he knows something about the strength of the arms of some who may heave the balls and of their ability to project inshoots, fade-a-ways, and other curves. He believes that a sort of neutral position, as it were, will be hazardous enough and so only asks the question, "Ain't it?" or "Is it?"

In conformity with usual argumentative practice, we will start off by citing an example. Mr. Line-Worker had violated instructions. It had been brought to Mr. Next-Up's attention, but Mr. Next-Up had failed to take prompt action to correct the violation. Another violation occurred, and this came to the attention of Mr. Hi-Up. Mr. Hi-Up put Mr. Line-Worker in the way of proper punishment; had such converse with Mr. Next-Up as he thought best under the circumstances, and reported his action to his superior, Mr. On-Top. Mr. On-Top delivered the punishment recommended with extras to Mr. Line-Worker, and told Mr. Hi-Up to put a memorandum in the personnel folder whose function it is to hold in orderly arrangement the record of Mr. Next-Up's efficiency, pointing out his inefficiency in this case. Nothing being said as to the details of doing this, Mr. Hi-Up decided he would have his stenographer typewrite the memorandum on yellow paper, give the original to Mr. Next-Up, and have the carbon put in the said folder. - Well, this was done, and Mr. Hi-Up declined with thanks Mr. Next-Up's resulting offer of resignation because he was thinking of his "personal accountability," and was afraid that if Next-Up bunched it, the performance of Mr. Come-On, whom he would have to put in his place, and whose dependability he would have to underwrite, would not be as good as that of Next-Up.

Now the question is: Is this an illustration of how personal accountability is, or as it ain't? A question in point is: Should or should not Mr. On-Top have put a memorandum in Hi-Up's personnel folder, giving him "what's what" for ever letting this happen in his organization and "let the rest of the world go by?"

If there are any readers who say he should, then to them the next question is, "Why didn't he?" Assuming that he is a follower of the "personal accountability" plan - I should say principle (of course, if he had done that, he might by way of helping Hi-Up to do his job have suggested the advisability of the memorandum to Next-Up).

Now, my own guess is that On-Top slipped up in carrying out his theory. And in making this guess I'm not arguing that the theory is sound. Maybe he couldn't afford to take the chance that Hi-Up would deliver without telling him how. But the point that's bothering me here is: Would personal accountability demand that Hi-Up be held accountable for this by On-Top, or did he deserve to go free under this principle and be told how he should lambaste Next-Up?

The editor will not allow space for further illustrations, but each one who desires can possibly find some of his own. There are two points that I want to make in closing: first, a mere declaration does not change a theory into an established practice. The Forest Service can't forsake old paths and follow new ones always by virtue of an announced plan to do so any more than a hardened sinner like Nick Carter could follow always in the ways of righteousness by merely foreswearing his evil ways. There would be many times when he'd slip back in thought and action, and it would take many hours of prayer and much mental effort before he would even approach the degree of perfection for which he had declared himself. I doubt whether many of us have found the way to carry out this policy of the Big Boss's consistently, and believe we need to apply ourselves diligently if we are to succeed in doing it.

Second: There is a certain incompatability about increased personal accountability and increased instructions as to how things shall be undertaken. Doubtless they can be successfully mixed. Flour and baking powder can be mixed in the right proportion along with certain other minor ingredients, and if properly treated, delicious dough-gods will result; but if mixed in wrong proportion, or wrongly handled otherwise, they will be consumed, not with pleasure, but only as a means of subsistence. I doubt that we are as yet all so good at mixing increased personal responsibility "with increased instructions as to how as to always get the best results, - we need practice and observation and study.

N. B.--The illustration used above is near enough to the truth to come within the bounds of author's latitude. The names are fictitious.

(A further discussion of "personal accountability" by Col. Greeley will appear in an early issue.--Ed.)

Mister Mangin's Mirror

On the excess property list we saw that D-6 had a "Mangin Mirror," which wasn't wanted where it was. Now we did not know Mr. Mangin, nor did we know anything about the quality of his mirrors, but we wrote the D.O. and stated that if, perchance, this mirror was suitable for use in the office, we would like to have it. We wished to check up on the fit of the new uniform and be informed when our general appearance ceased to be standard.

Well, without more correspondence, we received the mirror. Now, it is possible that the inhabitants of the D.O. can use this kind of mirror and, on second thought, we are of the opinion that they must use it, since we scarcely ever see things as they do; but when we gazed into this parabolic, diabolic hybrid, which resembles a cross between a Ford headlight and a stereopticon, our reflected physiognomy stared back at us with its necktie where its forehead should have been, and its general appearance that of a badly withered Yellow Newtown.

Is it possible that the D. O. sees everything inverted and reduced? We are of the opinion that this mirror is the explanation of many things that have always been a mystery to us before. Anyway, Mr. Mangin's mirror is now resting in the darkest corner of the storehouse, and we will gladly exchange it for a left-handed meat auger, or a thingummy for the Ford. Also, we wonder what tomorrow may bring.--Deschutes.

The Pinon

By J. N. Langworthy, ex-D-2

The pinon (Pinus edulis) thrives in situations which would be fatal to other trees. Its extensive root system draws moisture from a large soil area and at the same time provides secure anchorage in the cyclonic winds which sweep its habitat.

The public in general considers this tree of little economic value, but if you would take the trouble to ask the Montoyos, the Garcias, the Cordovas, or, for that matter, any of the many Mexican families who live in the great pinon belt which extends east of the mountains in southern Colorado or northern New Mexico they would tell you a different story; for are not the jacales in which they live built of pinon posts set upright, in a row, and plastered over with many coats of adobe, thus providing a home, proof against wind and cold? And of all the wood in the world there is nothing quite so good as pinon for a fireplace. No sparks fly to set fire to rugs or carpets, and it makes such a hot fire that it can be used in a forge in place of coal.

The pinon groves provide the best possible shelter for stock, far better than sheds, for repairs are eliminated, its resinous nature repels mites and lice, and its dense crown is almost wind and snow proof.

The strike in the southern Colorado coal fields during the winter of 1921-22 threatened to cause empty cupboards in the homes of the Mexicans. These people cultivate their fields during the summer and work in the coal mines or haul pinon props and ties in winter, but a most providential crop of pinon nuts afforded work for everyone.

Nearly every Mexican in the pinon belt, big, little, old and young, picked nuts. Camps were made at convenient places by building walls of branches around large pinon trees, thus providing very comfortable shelters from which the work was carried on.

Very little snow fell, so that it was possible to gather nuts all winter. The method followed usually, when the cones first open and before the nuts fall, is to spread canvas under the tree and beat the branches with poles. The nuts drop on the canvas and are sacked for transportation to the ranch, where they are cleaned.

Later in the season, when the nuts have fallen to the ground, they are sometimes picked up by hand, but usually nuts, needles and sticks are all scooped up together, put in sacks and afterward cleaned.

The cleaning process consists of spreading the contents of the sacks upon a canvas sheet, raking out the coarsest trash, and then winnowing in the wind. Afterward any foreign matter is removed by hand. Where fanning mills are available, the process of cleaning is not so laborious. Commercial pinon nuts should be 100 per cent pure.

The last operation is the roasting, which is necessary to make the nuts keep well. This is done in the oven of an ordinary cook stove or an horno, a small conical oven made of adobe, found in all Mexican settlements and used in baking bread. When the nuts are roasted they are ready for market.

During pinon nut seasons, which occur only at intervals of several years, everything eats them; pigs, sheep and people all thrive on these rich little nuts. Everyone has a pocket full. The most approved Mexican style of eating them is to place a handful in one cheek, transfer a nut by means of the tongue to the molars on the opposite side, crack it, carry it with the tongue to the front teeth, there the tongue and teeth separate the meat from the shell,which is expelled from the corner of the mouth. Some human chipmunks have become so proficient that a string of shells are continually falling.

This is great exercise for the tongue, and after one becomes proficient in eating pinon nuts according to this style, he can pronounce any word in the Mexican vocabulary.

There may be trees of greater commercial value, but when it comes to real worth there are few comparable to the pinon; at any rate, that is the sentiment of our Mexican population, and I am sure if they were to vote on a National tree the pinon would be their choice, for it furnishes material for their buildings, their fuel, part of their livelihood and, in rare seasons, food for their stock, a delicacy for themselves, and cash and supplies from the store where the nuts are marketed.

A Wood Product for Road Binding

By E. H. Frothingham, Appalachian Forest Exp. Station

Chemists of the Champion Fibre Company, Canton, N. C., have found a unique use for one of their liquid by-products from sulphite pulp manufacture, namely, the fixation of dirt roads and prevention of dust. Through the courtesy of W J. Damtoft, a member of the Appalachian Experiment Station staff recently had an opportunity to observe the results of road binding with this product, which is on the market under the name of "Bindex."

A Wood Product for Road Binding (Cont.)

"Bindex" is described by R. W. Griffith, chemist of the Champion Fibre Company, as "a ligno-sulphite liquor obtained as a by-product from the cooking of spruce and hemlock wood in the preparation of wood pulp." According to Griffith, the wood is digested with a solution of calcium polysulphites prepared by passing SO_2 gas into milk of lime. The digesting is carried out under pressure in large autoclaves. After the removal of the fiber the remaining liquor is made into "Bindex" principally by concentration.

"Bindex" is a compound of lignin, alkaline sulphites, and glucose. It contains the original resins of the wood, and the ligneous matter consists principally of "embryo cellulose." It is prepared in both a powdered and a liquid form. The liquid is a heavy, molasses-like "stickum," sticky enough to serve (if the need is great enough) for office use in gumming papers. It is not greasy, contains no tar or oils, and is freely soluble in water in all proportions. It is applied on road surfaces, after diluting with two or three parts of water, in an ordinary sprinkling tank, and one gallon of liquid "Bindex" is said to be sufficient for one "square" (10 x 10 feet) of road surface.

The solubility of "Bindex" would seem to cast doubt upon its efficiency for roads in such a wet climate as that of Canton, but a trip by automobile from Asheville to Canton over dirt roads which had and had not been treated with "Bindex" about 12 months previously demonstrated an appreciable difference in favor of the former, as to smoothness of surface and freedom from dust. The company claims that "it is not necessary to apply "Bindex" more than twice in the course of 12 months on any road after the initial treatment."

According to Dr. Joseph Hyde Pratt, of the N. C. Geological and Economic Survey, "Bindex" extract actually enters into intimate chemical combination with sand and clay, forming a bond which becomes permanent in time, and for this reason it is especially adaptable for binding the surfaces of sand and gravel-clay roads.

Aesthetic Value of Wild Life

By Smith Riley, Biological Survey

Beyond all interesting natural objects and activities, animal, vegetable, and geological; beyond all the opportunities for healthful, joyous exercise; beyond all the beauty of the landscape, no matter how expressive or beautiful, the one thing which impresses those who come in contact with it most deeply and lastingly, and which should be recognized as the most priceless recreational quality of the forests, is the sense of freedom and independence which they give. It might be said that the wild life of the forest region is this expression of freedom in animate life. Certainly there is no one feature which lends so much attractiveness to our mountains and forested areas as the presence of an abundance of wild life. It is questionable wheth there is another subject which can even approach wild life in unusual appeal to young or old. Whether the individual is of the country or the city, he or she is at once interested in animals. This interest is instinctive. It goes back to the day of the "dawn man." By force of circumstances, his sole interest in life must have been in the animals and the other creatures surrounding him. His very existence depended on the constant observation of them. This interest has persisted ever since, and probably always will persist.

Wild life values can not be measured in standards of currency; it is none the less, perhaps, of more importance than economic considerations.

Fire Increases Dry Site Type

By E. F. McCarthy, Appalachian Forest Experiment Station

Dry site types of the Southern Appalachians usually have a southerly exposure, though dry winds and geological structure may create a dry site type on any but north exposures. Fire is a constantly disturbing influence which, by destruction of litter and humus and killing back of certain species, tends to produce a state of shrub vegetation.

Burning has brought about changes slowly, and neither the unburned type nor the ultimate fire type has been produced. In some places on dry slopes and ridges a laurel type has come in accompanied by other heath vegetation, and this seems to be semi-permanent, though it will probably give way to tree growth ultimately if protected from further fires. In some places a scrub oak type [illegible] will soon give way to pines and more valuable oaks as soon as seed is available.

Fire Increases Dry Site Type (Cont.)

A current study of fire damage made by the Appalachian Forest Experiment Station shows the common reaction of the several species to fire. Two large fires have recently been worked over by a field party, one on the Unaka Forest, and the other on the Pisgah Forest. The most severe burning occurred on the dry slopes, and both burned areas contained cove land which had been skipped by the fire.

The fire on the Pisgah injured all hardwoods severely, killing the cambium even where the bark was scarcely blackened. Even thick-barked chestnut oaks were scalded in this way, and no species of hardwood equaled pitch, shortleaf and table mountain pines in fire resistance. The fire was severe enough in places to kill all the needles on the small and medium sized pines and all except the tops of the larger trees. These trees are now putting out new shoots wherever the buds survived, and the smaller trees are sprouting from the boles.

While it is not possible to determine definitely whether a tree will survive, it is certain that those trees so severely injured as to render survival doubtful will not develop a good growth rate nor sound timber.

All three pines are sprouting profusely around the bases of all small trees, and seedling pines are coming in plentifully. All hardwoods are sprouting, but the sprout groups are too dense as a result of previous fires, and growth will be slowed down as a consequence.

The tendency, therefore, is to favor the pines, increase the number of pine seedlings, cripple the mature hardwoods, start disease in the fire-scarred butts, and create dense clumps of sprout hardwood. Scarlet oak, sassafras, gum, red maple, chestnut, and some chestnut oak are the best sprouters and make most rapid growth in early life.

These new burns also show chinquapin, laurel, rhododendron, huckleberry and pink locust sprouting quickly to make a ground cover. The roots of these species bind together the surface soil and, when found in pure pine stands, form a typical dry heath turf. Fires have doubtless aggravated this condition, and the shrub cover in its turn has prevented dense closure of the forest canopy by using up the available water. The last forest cover of such a dry heath is scattered pine, gum or very scrubby chestnut and chestnut oak.

Fire has seldom devastated, but has seriously deteriorated the stand, until many thousand acres are devoid of enough merchantable material to support a logging operation. The future promise of such stands lies in protection until the cull stand is replaced by sound timber. Such a stand will have more hardwood and a better condition of forest soil.

WASHINGTON NOTES

How Do They Get That Way? December 23, 1915, a member of the Washington office Branch of Grazing wrote an officer in another Bureau of this Department with which Grazing has cooperative arrangements. To-day, - after 6 years, months and 11 days, - the reply is received.

Never give up, boys; Grazing doesn't! But, take it from us, the first five years of silent suspense are the hardest!--W.A.D.

The Trail Manual: The proof of the Trail Manual has been received from the Printing Office, read and returned. The cuts have been reduced, plates made and proof prints struck off. The date of publication is dependent upon the speed with which the printing office handles the job. Congestion of work there makes a promise of early publication doubtful.--E.W.K.

At What Hours are Fires Most Likely to be Discovered by Lookouts? From an investigation made by Forest officers on the Tahoe National Forest in District 5, the following information based upon a 10-year discovery record was gotten. The figures are averages per season.

WASHINGTON NOTES (Cont.)

Hours AM	Number of fires discovered	Hours PM	Number of fires discovered
12 - 1	Less than 1	12 - 1	20
1 - 2	" "	1 - 2	25½
2 - 3	" "	2 - 3	23
3 - 4	" "	3 - 4	20
4 - 5	1½	4 - 5	19
5 - 6	6	5 - 6	15½
6 - 7	6½	6 - 7	7
7 - 8	8	7 - 8	7½
8 - 9	12	8 - 9	4
9 -10	14	9 -10	2
10 -11	17	10 -11	Less than 1
11 - 12	23	11 -12	1½

--E.W.K.

FOREST PRODUCTS LABORATORY

Bulletin on Alcohol from Wood Waste Stirs Interest: Gentlemen: Having noticed the Inclosed add of your new bulletin in one of our Papers will you Please send me one of the booklets I wish to try it out to make a glass of Good Rye Whiskey.

Yours,

(Name and address on file at the Forest Products Laboratory.)

Shades of Standardization: An exporting company specified "Canary White Wood" in an order for veneer for foreign shipment. The sample of this wood of fanciful name submitted to the Laboratory through the American Hardwood Manufacturer Association proved upon examination to be none other than sugar maple.

Expansion of Educational Activities: The demand for educational courses from the wood-using industries has been of such volume in the past that, coupled with a belief in the effectiveness of this method of putting into practice the results of research, the Laboratory will expand this work this year. To the regular courses in kiln drying and boxing and crating has been added one in gluing; a fourth course is contemplated. The four courses will be given simultaneously at intervals of three months, the first coming in September. By combin the courses a number of lectures common to all four can be given to the members of all classes at one time.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Forest Supervisors Sanitary Inspectors: A year ago, a cooperative agreement was executed between the District Forester and the Secretary of the Colorado State Board of Health, which had for its object the improvement of sanitary conditions throughout the National Forests. All Forest Supervisors in Colorado were commissioned as Deputy Sanitary Inspectors for the State, to serve without pay, and so much was accomplished during the year that the Board has offered to issue commissions to all permanent rangers and any other officers which the Service is willing to propose, to enforce the State sanitary laws within the National Forests and outside, for that matter, if the officer's duties take him in regions where he can be of help to the Board in enforcing the laws. The arrangement works out like our cooperation with the State Game and Fish Department.

Timber Sale on the Holy Cross: The bid of the Fleming Lumber & Mercantile Company of Red Cliff, Colorado, has been accepted for the timber in the lower Wearyman Creek unit on the Holy Cross Forest. This unit contains 3,532,000 feet of live Engelmann spruce and lodgepole pine, 272,000 feet of live Alpine fir, and 1,303,000 feet of dead sawtimber, in addition to an unestimated amount of mine prop material. The bid price was $2.75 per thousand for live lodgepole pine and Engelmann spruce sawtimber; $1.25 per thousand for live Alpine fir and dead spruce and pine sawtimber and 25¢ per hundred linear feet for mine props.

Mo. Pac. Issues San Isabel Booklet: District 2 is just in receipt of a well made pamphlet of 30 pages entitled "San Isabel National Forest, Colorado," which has been published by the Missouri Pacific Railroad. It contains 21 very good half-tone cuts as well as good information regarding the San Isab It is clearly a recreation booklet, but also covers the sheep and cattle industry and other utilitarian uses of the Forest, together with the fire and game laws.

Ranger Bill Says:

I wonder if the Lab's. de-inkin' process wouldn't improve some of the circular letters we get?

Bud Seeley, who worked in the Service back when the Rangers used to get out and fight fires, stopped to see me t'other day.

Next to a balky horse, I don't know anything more aggravatin' than a feller who wants to "play safe" on everything.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Bucket Brigade and Forest Fire: Methods don't work the same on country houses and burning timberlands. This summer on private lands a fire was set, most probably by a spark from the sawdust pit of the Santa Barbara Tie & Pole Company's mill. Everything was dry as tinder and the fire raced up the slope like a runaway horse. Only the wind blowing away from the mill saved it. There was quite a supply of tools at the mill, but nobody seemed to know how to use them. Finally a bucket line was established from the creek up the hill for a quarter of a mile or more and the mill hands and others tried to douse the fire with water, but the flames romped merrily on. After two days of wasted effort, a lot of expense and burned area, the mill superintendent was induced by forest officers to throw his men into the construction of a fire line after Forest Service methods. The situation was then soon controlled. The Carson doesn't recommend a bucket line as a part of your fire plan.

To Remain in Arizona: Mr. Hoyt has decided to make his home in the neighborhood of the Sitgreaves Forest, of which he until recently was Supervisor. In bidding official farewell to the people with whom he had worked, he said, through the Sitgreaves Bulletin: "Since I expect to remain in Navajo County indefinitely, there is every prospect that I will see each of you personall. In fact, it's not beyond the possibilities that you'll have to sell me timber, prod me to furnish my share of salt and tell me to keep my stock on their own district. In the meantime, I bespeak for Supervisor Roberts and Mr. Lessel your confidence and heartiest support in furthering the aims and purposes of the Government as represented by the Forest Service."

"Under Catalina Pines": So runs a catchy phrase that is coming into popular use among Tucson newspapers in campaigning for stay-at-home recreation as against the carrying away and spending of hard-earned local money at distant beaches, watering places and other resorts. Of course, it is the Coronado Forest that is providing and opening up the places that justify the suggestiveness of rest and pleasure given in the musical ring of "Under Catalina Pines." There's a value to a community when the near at hand mountains and streams and trees become endeared to the people, but there is likewise a value to the National Forest in the same sentiment. When the people love the heights and the valleys, the songs of birds and the deep shadows, carelessness and destructive practices awaken a sense of personal injury, an affront that is resented by every one. With the growth of individual interest in the forests, greater protection and wiser use are assured and there is built up a feeling of indispensability.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Confessions of a Forestette: After two days of wearying travel beneath parching sun and through choking dust, how welcome that U.S.F.S. boundary sign seemed to our travel-strained eyes. Even the flivver purred its contentment as we bowled along the smooth road of Cottonwood Canyon just within the Wasatch National Forest.

On either side the hillsides were restfully beautiful in their soft green garb of timber and vernal shrubbery. As we approached open spots in the canyon, I found myself musing over the botanical identity of the various species of shrubs that grew close by the roadside, and I was a little flattered because I knew that those vivid bluebells were none less than Mertensia lanceolata with a palatability factor of something like 100 per cent. Every lorn, long-ago-shaven sheepherder was in my imagination a villainous trespasser. I said a little silent rite of safety over every camp fire that we passed. When we stopped for the night at U.S.F.S. Camp Alice No. 2, I was even conceited enough to feel that I owned shares in the far-off vista of the Milky Way and the benignly smiling moon because they both looked down upon the Wasatch National Forest.

The next morning before continuing our journey, I fished into my pocket, and finding my little green and white celluloid Forest Service pin, placed it conspicuously on the lapel of my coat.--Arvilla Hansen.

Forest Service Cooperation Recognized: Mr. Morse, who has just recently returned from an inspection trip in Idaho, states that while in Boise he met Mr. George H. Isaac, who is State Fish and Game Commissioner for Idaho. Mr. Isaac spoke in the terms of highest praise for the cooperation which he is receiving from Forest officers in his State. He said that the Fish and Game Department was very anxious that the Forest Service know that the cooperation which Forest officers in Idaho are giving is thoroughly appreciated. He states that last year his department put out over thirteen and one-half million fish in the streams of Idaho from the four State hatcheries, two located in the north and two in the south. The two in the south are located at Hay Spur and Ashton. Mr. Isaac claims that the output of the hatcheries this year will be considerably greater than last year, but he did not make an estimate of the actual number to be deposited.

Surveyors of the Coast & Geodetic Survey have been working on the Caribou and have occupied Stump Creek, Black Mountain, and Caribou Mountain with a view to "shooting in" Red Peak and Poker Peak. The men had considerable difficulty in reaching the summit of Caribou Mountain due to heavy snowdrifts.

Lightning struck the summit of this mountain and wrecked the instrument camp located here. Fortunately, the men were at their regular camp some three miles distant at the time. A stone cairn was utterly destroyed and five furrows were cut into the mountain top. The surveyor's tent was burned up, and a $1,500 theodolite was ruined. The data and records, however, were thrown out 20 feet aside unharmed.

DISTRICT 5 - CALIFORNIA DISTRICT

He Pleaded Guilty: From information given by W. E. Grant at Forest Glen, Ranger Everest of Hayfork arrested F. Lanctot of Arcata for leaving his camp fire burning on departure from his camp on the Trinity State Road, seven miles from Forest Glen. He was taken before Judge Dockery of Hayfork, where he pleaded guilty to the charge and was fined $50, which fine, however, was suspended for six months pending defendant's good behavior. The judge instructed the defendant to report monthly during this period to Ranger Everest and gave him a serious talk on the result of carelessness with fire.

Relic of the Fremont Expedition Found on the Mono: A prospector recently working over some shallow placer north of Fales' Springs, picked up what appears to be a cannon ball of moderate dimensions. The metal is apparently bronze, according to Ranger Atcheson, who has just come into possession of the relic and will place it on exhibit at the Supervisor's office. The locality where found seems to be identical with the route passed over by Fremont in 1844, and since this is quite a way off the regular emigrant trail, it is very probable that it was left there by the Fremont expedition. He abandoned his howitzer some six miles north of place of discovery.

Service Bulletin

U. S. FOREST SERVICE

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PLAYING SQUARE WITH THE FISCAL REGULATIONS

By W. B. Greeley

The most distressing duty which has fallen to my lot in the Service has been dealing with men, sometimes old associates on the trail, who have not played square with the fiscal regulations. I do not mean grafters; to the honor of the Service, they have been few and wide apart. I mean honest men, zealous men who put their names to vouchers or certifications that are not true. I call these men honest and zealous advisedly. Their false returns are not made for personal gain. Almost invariably they seek by this means to accomplish some cherished plan for advancing the interests of the Service in their charge, to put through some common-sense betterment or economy on a National Forest, or to pay for something which the Government in all fairness should pay for but which the auditor can not pass under its right name.

Two things hurt particularly in these cases. The first is that the starting point is often a desire to get results of benefit to the Service and the public. For years we have preached resourcefulness, initiative, that results are what count. The very zeal to get results that count has led some men to justify wrong ways of getting them, when square compliance with the fiscal rules stood in the way. The second sting in these cases is the plea that lots of other Service men are doing the same sort of thing. Can it be that we have developed a hardened fiscal regulations "conscience," like the old public land conscience, which leads men who never knowingly tell untruths in other affairs of life to sign their names on a certain lot of office forms to things that are not so? We call them "fiscal irregularities," but every one of them gets down in the end to a lie, a lie with a name written under it.

I do not believe for a moment that this thing is common in the Service, but I do want to say, whether it hits many or few, that we must nail the lie in accounts with the Government just as we would nail it in dealings with private citizens. We must nail the fiscal lie, black, white or gray, a hundred dollars in a supply voucher or thirty cents padded in a subsistence account. The standing of the Forest Service depends upon public confidence in our integrity, and integrity must be just as clean toward the Government as toward the public whom we serve. Besides, lies are lies and Satan is the father of them all. We can take no chances with the good name of the Forest Service. Men who do not play square with the fiscal regulations, however laudable or disinterested their motives, however fine their records in other respects, can not be retained.

The rules which govern us are not perfect by any means. They are not always fair to the employee. But the way to meet a bad rule is not to find a devious and untruthful way around it. We will get it changed if we can; but if we can not we must accept it with such cheer as we can muster as one of the rules of the game. It must be one of our traditions, a part of the fine honor of the Forest Service, to play square with the Fiscal Regulations.

SHOOT IF YOU MUST, BUT USE YOUR HEAD

From August 8, 1921, to the same date this year, 11,356 photographs sent in by Forest officers were reviewed by the writer. Of this number 1,437, or approximately 13 per cent, were selected for the Service collection as suitable for record pictures or for use in connection with educational and publicity work. In the face of such a showing, if we amateurs with the camera had been working for a commercial firm, we would all have been fired about eleven months ago.

As a photographer who takes a good many punk pictures, I feel qualified after this photo review work to make a good guess at what is the matter. Briefly, it is that 90 per cent of the poor pictures are due to carelessness and lack of purpose. We all claim our share of brains, but when it comes to taking a photograph, most of us seem to be standing on them. No rules or regulations will ever remedy this failing - it is strictly up to the individual man to train himself. Photographers may be born, but I never met any of them. Study of the scene on the ground, light, setting, purpose of the picture, etc., combined with a careful review of the finished product is the only way to get results. It's easy to say, but hard to accomplish, still there are a few men in the Service that have made a success of photography through painstaking effort.

Another point: After milling through 10,000 3A prints and a small number of larger sized pictures, I am convinced that as far as educational and publicity work goes, the small print is a "flivver." Rarely are pictures under 5x7 size suitable for such purposes, and 6½ x 8½ or 8 x 10 are preferred. The bulk of the prints given out from the Washington office, amounting to from 5,000 to 8,000 per year, are photographs that were taken 10 or 15 years ago, together with special large sized pictures secured during recent years. "You press the button" with a 3A is not getting us results. The solution to my mind lies in placing one or more good cameras on each District and detailing men to round up the photographs needed, making a special job of it whenever occasion demands. The small cameras should then only be given to men who can produce the goods, and incidentally all old machines should be ditched.

The "riderless horse" and the "headless man" are disappearing from our photographs, but their place has been taken by the "driverless Ford," and - well, that's enough, look at your own District and personal collection and you will know all the rest of the sad story.--H.

EXPERIMENT STATIONS AND PUBLICITY

By G. A. Pearson

Before we can interest the people in forest experiment stations, we must interest them in forestry. When the forestry idea is thoroughly sold, experiment stations will come as a matter of course. Much remains to be done toward educating the public on the needs of forestry. This is not the peculiar job of Research. Research men can contribute their mite, but it is a job for the entire Service, and the best field is in cities and agricultural communities remote from the National Forests. Talking forestry in forest communities is like peddling ice in an Eskimo village.

Until forestry gains a hold on the general public, forest experiment stations in the West must rely for support almost entirely on the Forest Service. When Forest Supervisors and other administrative officers declare with one voice that larger, better equipped and better manned experiment stations are an absolute necessity, then Congress and the public will take notice. Until there is such a demand from those who are practicing forestry, publicity emanating from the experiment stations themselves will carry little weight. The trouble with the experiment stations is that they have not made themselves indispensable to the Service. The fact that the experiment stations are not equipped to do their work has made it necessary for administrative men to fight their battles alone, with the result that their dependence upon the experiment stations has decreased rather than increased. What is needed to put the experiment stations on the map is not more publicity but more research. We hear much about the failure of investigators to place their findings before administrative men, and of their failure to get the results of research into practice. Research is giving all it has to offer. The trouble is in the manufacturing plant, not in the distributing department nor in the advertising department. As for putting results into practice, I know of no important conclusions which have not received due consideration. If recommendations are discarded or action postponed for administrative reasons, the responsibility should not rest upon research.

If the forest experiment stations are to be floated off the rocks, relief must come from within the Forest Service. The experiment stations must make themselves indispensable to the Service. How to increase their usefulness in the face of decreased appropriations is the problem which now confronts us. We must concentrate on absolute essentials. Two men can not do the work of ten. There are many duties which might be classed under research, but only one belongs preeminently to research. This is to supply the data needed to develop better forestry. If the experiment stations meet this one obligation their future is secure; if they fail in this obligation nothing can save them.

FIRE AS A SILVICULTURAL AGENT

By W. C. Lowdermilk, D-1

Fire is an agency somewhat similar in its workings to compound interest; it reaches unmanageable proportions in a short period of time unless the conditions governing its spread are fully under control. Training to control fire used as a silvicultural agency involves the precautions made by an Army officer under actual war conditions. As little as possible is left to the whim of chance. It is just at this point in the practice of silviculture that too much attention and care can not be given. Any sort of burning in the forest should be under the direction of men who know how "to handle fire in the woods."

Proficiency in the handling of fire needs more recognition with corresponding increase in pay and accountability. On the successful control of fire depends entirely the success of silvicultural practice.

Not only is the practice of silviculture at stake but so are large investments. They are represented by the costs of marking, of sale administration, of costs of piling slash and costs of forest sanitation measures. These items may easily run up to $30 or $50 per acre in addition to the value of the property in reserved trees. Considerable sums of money may, therefore, be lost in a small slash fire which escapes control. As much care for the control of fire in the woods should be provided for as for the control of fire within a ranger station.

SHOULD OVERMATURE DOUGLAS FIR BE LOGGED NOW?

By J. V. Hofman, Wind River Exp. Sta.

In the Douglas fir region of western Oregon and Washington the present-day methods of utilization are such that often a large per cent of the Douglas fir that is cut is left on the ground, and the other species, such as western hemlock and western red cedar are, in a large part, destroyed. This type of logging is controlled by economic conditions, and the operator takes out only the material that can be handled at a profit at the present time.

The amount of debris left on the ground after logging is a problem that must be met in order to look forward to a stand of young growth on the logged-off area. To remove the amount of material left after logging involves considerable expense, and whether this extra cost is justified in order to procure a new stand is the question that must receive careful consideration in order to determine whether it is profitable to practice forestry on the area involved.

If a broadcast slash burn is resorted to the material on the ground may be partly consumed, but the standing material that is left is a very great fire menace and is a serious factor in both fire prevention and control. In order to secure young growth after logging the slash should be burned in the spring the first season after cutting and all fires kept out of the area thereafter. Consequently, very intensive fire protection is necessary on an area of this sort. The cost of cutting the standing material, in order to burn it all in the first slash fire, must be charged against the stumpage removed from the area. Where only 35,500 board feet of Douglas fir and western hemlock were logged there were 43,800 board feet left standing, consisting mostly of western hemlock and some western red cedar, Douglas fir, western white pine, and silver fir. On this area more than one-half of the material grown was left on the ground. This material would be suitable for paper pulp, shingles, and lumber if the economic conditions were such that it could be taken from the forest.

The western hemlock was producing very good growth even in trees 300 years of age, some of which were still growing at the rate of about one inch in diameter in ten years. Although a forest of this type may apparently be deteriorating, the current growth must be considered. There may be no net growth at the end of a period of 25 to 30 years. However, the forest remains about the same in amount of material per acre even though the species may change. The question, then, arises whether a forest of this type should be cut at the present time or whether it would not be better to leave the forest intact for the next two or three decades until better methods of utilization and transportation make possible the use of a large amount of material that is now destroyed. It would certainly seem better to save the 40,000 or 50,000 board feet per acre that are not utilized now, with the prospect of utilizing a large per cent of the material later, than to utilize the 35,000 board feet per acre at the present time and destroy the remainder of the stand, and at the same time leave a very grave fire menace in the wake of the operation and endanger the prospects of a future crop on the area. The fire hazard may be averted by leaving the forest intact because the mature forest is one of the lowest fire risks of this region.

EAGLES AND ALASKA GAME

National Forest Examiner J. P. Williams says: "Regarding the destructiveness of eagles on game, several specific instances have come under my personal observation.

"Several years ago, during the month of February, while running into warm Chuck Bay, west coast of Prince of Wales Island, I observed about a dozen eagles making an attack upon a deer and went ashore to investigate it. Snow on the ground at the time helped to reveal the facts. A yearling buck had come out of the timber down to the beach a few hundred yards from where I had first seen him and had apparently at once been beset by eagles, of which there are always a number at any place in that region. The deer apparently had tried to get back into the timber but had been unsuccessful. Before I got ashore from the launch the deer had gone down and when I reached him was so nearly dead as to necessitate putting him out of misery. The attack of the eagles seemed to be mainly at the head and neck, the eyes especially being pecked at. No one could look at that deer and fail to realize the frightfulness of the eagle's fighting equipment in claws and beak.

"On two other occasions I have observed eagles harassing deer on the beach while traveling in the launch, but did not go ashore and make an investigation. Once on Stoney Mountain I was attracted by the actions of several eagles at a spot somewhat below me. Going down to investigate I arrived just in time to see a fawn dart from the side of its mother and plunge into one of the almost impenetrable thickets of mountain hemlock and cedar which are common at timber line in that region. The doe stood by very defiantly, occasionally stamping her foot as the eagles swooped down at her. She seemed to have no fear of me and apparently realized that the real danger was from her natural foes, the eagles. Even when I shot at the eagles she only gave a nervous jump at the report of the rifle, but did not run away. After killing two of the eagles the balance, some eight or ten, flew away.

"In a severe winter the deer are driven out onto the beaches, heads of bays and open points and who can say how large is the toll which the eagles take? A few knockdowns or the harassing to which the eagles subject him may in the deer's weakened condition mean the difference between survival and death at this season. I am sure that the total is a large one, and am also certain that many fawns are killed on the open meadows and parks around timber line when the deer come out in the early morning to feed."--S.R.

WASHINGTON NOTES

The Forester has returned from his tour of the western Districts and is now in the White Mountains with members of the National Forest Reservation Commission.

WASHINGTON NOTES (Cont.)

Operation and Other Skeptics Please Note: Two automobiles bearing California license tags were parked at the foot of the Washington Monument, and on the windshield of each was a Forest Service sticker and fire warning!

The Herbivorous Stage Driver: Extract from a report on homestead claim: "The hay crop was fed to the claimant's sheep until he was forced to sell his band. Since that time the hay has been fed to his horses and to Mr. Jones who runs the stage line."

Finnish Foresters Honor American Dendrologist: The following letter speaks for itself:
"Professor Dr. George B. Sudworth,
Washington.
The Finnish Forestry Society the object of which is to promote scientific forest investigation in Finland hereby requests to be permitted to enrol you
Professor George B. Sudworth as an honorary member."--W.S.

Forms for Fire Atlas: All the blank forms for recording the fire statistics called for by the Mather Field Report have undergone the proof run and reading and are now in the hands of the Government Printing Office for final action. It appears hopeful that the forms will be available for distribution before the close of the fire season, or October 15.--E.W.K.

FOREST PRODUCTS LABORATORY

Trying Out the Grading Sharks: A shipment of several thousand board feet of lumber for stock use received recently at the Laboratory was found to have only half a dozen boards of the grade specified, the remainder being several steps below requirements. The shipper will doubtless be surprised to find into what a nest of grading hornets he poked this questionable lumber.

Reciprocity: The headlines in a newspaper scream:
"TWO POLES SUCCUMB TO BOOTLEG LIQUOR"
while in a telephone magazine we read:
"LIFE OF POLES LENGTHENED BY PRESERVATIVES"
and in another article it is noted:
"LIFE OF POLES DOUBLED BY PROPER 'TREATING'"

Wood-Turning Operations Studied: Having completed work in the chair industr phase of the small dimension stock project in which waste and cost studies were made at ten representative chair factories east of the Mississippi, the Laboratory is now starting a series of studies on the wood-turning industry. A crew is working in a plant at South Bend, Indiana, making a start on the second leg of the main study. The results obtained in an analysis of the chair industry data indicate clearly the waste and expense incurred in producing small dimension stock from high grade lumber when this same material could be produced at the mills from a low grade mill by-product; also that in spite of the great diversity of small wood stock both in sizes, grades, and species demanded by the chair and other industries, there is indicated an ove lapping of requirements that will make practical carrying of ready cut stocks for trade orders.

RANGER BILL SAYS:

The wife's catchin' it! Last night she says - I need a dress and the kids need shoes, which objective takes priority?

Callin' a man "Mister" aint always an indication that you respect him

Our Deputy Super. is so fond of arguin' that he can't even eat anyth g that agrees with him.

DISTRICT 1 - NORTHERN DISTRICT

The Fire Fighters' Dinner: The National Editorial Association held its annual meeting at Missoula, Montana, July 19 to 22, with an attendance of more than 200 editors from all parts of the country. The District Office of the Forest Service volunteered to assist in their entertainment, and took over the task of decorating the banquet hall in Missoula, and, in cooperation with the town of Polson, served the noon meal on Idylwild Island in Flathead Lake, where the editors stopped en route from Missoula to Glacier Park.

The "Fire Fighters' Dinner" on Idylwild Island illustrated the use of Forest Service equipment and methods in feeding large numbers of men on the fire line. Nearly 400 people were served in less than 15 minutes, a complete hot meal, consisting of meat, potatoes, two vegetables, bread, pickles, fruit, coffee, and tea. The food supplies were paid for by the town of Polson. A large map showing the water power and paper pulp resources of the National Forests and streams of the Flathead region was a feature. The visitors were taken through the camp and the equipment and methods inspected and fully explained. A string of pack horses regularly equipped were packed with camp equipment, food supplies, and fire tools, and this proved most interesting to the eastern visitors. The address of welcome and all announcements were given out by wireless, using the standard sending and receiving sets of the Forest Service with loud speaker attachment. The editors spent about three hours on the island and were reluctant to reembark.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Emerson Hough Visits District Office: Mr. Emerson Hough called recently at the District Office, where he expressed considerable interest in the National Forests. He seemed to think that our ideas regarding the opportunity for recreational use are about right. His especial interest is in preserving the wilderness in its natural state and protecting the wild life. He is very bitter against anything which savors of violating the game laws either in spirit or letter.

Stock Ranges Getting Very Dry: The District Forester just returned from a trip to the Gunnison, Uncompahgre plateau, Montezuma and San Juan, states that extraordinary drouth conditions exist in that region and the range shows signs of suffering in consequence. While there was a heavy late snow and the higher ranges were open later than usual, there have been practically no rains of importance during June and July, and the stockmen were very much worried. These conditions have probably been relieved by heavy rains during the last few days, but there is a question whether some of the ranges will recover and if we will not find the bad effects of lack of seedling apparent next season.

The Small Sawmill which has been tried out on the Medicine Bow in sawing the logs too large for hewing into railroad ties, as mentioned in the note by Supervisor Hilton contained in the Service Bulletin of July 17, is reported to have proved entirely satisfactory, the mill having recently been purchased by the Fox Park Timber Company. A similar mill is to be installed by the Wyoming Timber Company in their operation on Douglas Creek on the same Forest. The mill has a capacity of from 400 to 500 ties per day, steam power is used, and the demonstration illustrates that it is entirely feasible to manufacture saw ties from over size trees. In fact, a representative of the American Sawmill Machinery Company maintains that it is more economical to saw ties than to hew them under present conditions.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Ranger Makes a Game Haul: Traffickers in deer hides are brought to justice by Forest Officer. Ranger F. E. Brennan, of the Zuni District of the Manzano, has suspected for some time that a certain merchant in Ramah, New Mexico, has been dealing in deer hides, but earlier attempts at discovery have not produced the actual evidence. Recently, however, Brennan rode into town and caught a transaction right in the doing. One Miles Lund, of Eagar, Arizona, was selling to R. K. White, the merchant, four hides. White and Lund were both arrested. Search revealed other hides and 46 were found in all, none of which bore the required shipment coupon from the hunting license, nor permission from the State Game Warden for storage beyond the ten-day period following the close of the hunting season. Trial was had in Justice Court in Gallup yesterday on the charge of illegal possession. While the condition of some of the hides indicated that they were killed out of season, this point was not made part of the charge. Fines of $50.00 and costs were assessed to each of the offenders and the hides are being confiscated by the State Game Warden.

New Big Lumber Company: The White Pine Lumber Company has been incorporated under the laws of New Mexico with a capital of $1,500,000. Bernalillo is to be the location for a double band mill, it is understood, and the plan of the company includes the construction of a logging railway to a body of timber on the San Diego Grant. Operations in National Forest timber adjoining the Grant on the Jemez Division of the Santa Fe are also contemplated.

Any Extra Cats on your Forest? "I have wondered if you know of anyone who would get me a wild cat or baby leopard," says a letter to the Supervisor of the Coronado from a woman stopping at Tucson Hotel. "I'll pay for their trouble. I would like either as soon as possible. I have had both and know the care of same." Supervisor Calkins has requested any of his Rangers who may come across one of these animals desiring homelike surroundings to advise his office.

Kircher Going to Brazil: The Secretary has selected Assistant District Forester J. C. Kircher to have charge of the U. S. Department of Agriculture exhibit at the World's Fair at Rio Janeiro, Brazil. Mr. Kircher sailed from New York on August 5. The detail will last about six months.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Forest Training for Vocational Students: During the last two weeks a school has been held at the Tony Grove Ranger Station in Logan Canyon for Federal vocational students taking the animal husbandry course at the U.A.C. There were twenty students present, ranging from those who have had merely a grammar school education to those who have had some college work. They are all planning to settle down in this general region and become farmers. This work was given them so that they might know range conditions and how the Forest Service tries to secure proper utilization of the range. The main part of the course was conducted by the Agricultural College instructors with assistance from Grazing Examiner D. A. Shoemaker, Supervisor C. B. Arentson, Rangers H. I. Rice and Christensen of the Cache Forest, and Forest Examiner F. S. Baker of the District Office who gave them a little instruction on general forestry.

Another Law Enforcement Case: Mr. French returned from Soda Springs, Idaho, where he conducted a hearing before U. S. Commissioner McLean in the case of the United States v. Charles Barnes, charged with setting fires on the Caribou National Forest and leaving the fires without extinguishing them in violation of Sec. 53 of the Penal Code. Defendant's contention was that as the fires were set on ground (unpatented) upon which he has located under the mining laws, he could set fires without let or hindrance of the Government officers. The Commissioner bound defendant over for the Federal Court in October, bond being furnished in the sum of $500.00.

Mr. R. E. Gery has returned from the Weiser National Forest, where, in company with local Forest officers and representatives of the State Land Board, the exterior boundary line of the area of timberland to be exchanged to the State of Idaho was agreed upon. Mr. Gery states that the total area contained 15,808.96 acres. He also visited the Boise Forest for a conference regarding the proposed Boise Basin Addition. The local forces of both Forests are preparing to combat any possible fire situation.

DISTRICT 5 - CALIFORNIA DISTRICT

That Recreation Pays Financially is pretty definitely proven in the case of the Angeles. The Special Use receipts from this Forest (practically all recreational uses) were $34,404.58 for the fiscal year 1922.

This is more than the special use receipts from most of the other Districts, and is nearly double the grazing receipts of any Forest in this District.

For the first 20 days of the new fiscal year 55 recreation permits were issued by the Angeles. At that rate the special use receipts from this Forest will be $50,000 by 1925, an income not to be sneezed at by any Forest.

Save the Yuccas! A campaign is on foot in and adjacent to the southern California Forests to put a stop to the ruthless destruction of the yucca plants by campers and motorists. Since the yucca blooms but once in five or ten years, it is contended that there will soon be no yuccas at all unless people quit picking the blooms. The Automobile Club of southern California and various other agencies are cooperating with the Forest Service in an endeavor to put a stop to the ruthless destruction of these plants.

First Aid on the Inyo: Riding forth over the summit onto the "other side" to secure affidavits in a camp fire case, Ranger Cranston's mission was diverted into that of a hospital corps when he came up with a party of tourists. One of this party, Miss Docia Patchett of Berkeley, had met with a serious accident - a loose boulder had fallen on her, breaking her leg in two places. The injured woman had been placed on an improvised stretcher. A burro was carrying one end of the stretcher, while two men of the party spelled each other in carrying the other end mile after mile. It would be rare to meet another party of tourists who was as much up against it as was this party that Cranston aided. About through with one day's work, he started in and added another to it.

After helping them along, Cranston got hold of one of our trail crews and carried the woman to Parcher's resort at South Lake. Then he motored over a road that is as bad as it can be and still be a road, about 8 miles to telephone for a doctor in Bishop. The physician was obliged to leave his machine at a bridge-repair point and proceed with Ranger Cranston to the injured woman. They finally arrived at Bishop with the patient about two o'clock in the morning. Her injuries proved to be more serious than they first thought.

Cranston piled out with sun-up as usual and back to the job of getting the affidavits and superintending a road-making crew. He anticipates putting in a few nights of old-fashioned, uninterrupted sleep when he gets his annual leave next fall.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Radio-Activity: Fire prevention talks have been given during the past month in Portland by C. S. Chapman and A. O. Waha over the radio service of local papers. The radio operators of the U. S. Air Service in Eugene are now sending out fire prevention talks each evening, material furnished by the District Forester's office.

From the Country of the Big Sticks: A specimen of Douglas fir log was recently shipped from Oregon to Peoria, Ill., for display there during a lumberman's convention. The stick was 81 feet long, nearly 6 feet in diameter at the small end, and slightly over 8 feet at the butt. It weighed 95,850 lbs. and contained approximately 22,000 feet B.M. Two special flat cars were required to ship it.

Fromme a Composer: "Oh Olympic, Highway to the Olympics," is the title to a song, the words and music of which were composed by Forest Supervisor R. L. Fromme of the Olympic Forest. The song is officially sung by booster organizations of the town of Olympia.

The Four L Bulletin, official organ of the Loyal Legion of Loggers and Lumbermen, has offered to run a special page in its monthly devoted to Forest Service news. The August issue of the Bulletin carries the first Service page with an article by W. H. Gibbons, in charge of Products, on "Why Olympic Pine?" In the same issue there is an excellent editorial, "Logging for the Future," dealing with the new Sauk sale on the Snoqualmie Forest.

Service Bulletin

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TOO MUCH OSMOSIS

By Grover C. Hougham, Colorado

Mr. Preston stated in the 964th Service Committee Meeting that it seemed that about every one traveling in the field was "going out to inspect the work of the Ranger." Believing that a forest clerk is in a unique position to observe the operations both of individuals and of the Service, or at least of the Forest, I am tempted to make some observations.

I wonder to just what extent inspections are necessary? I have observed that inspectors have made mention in memoranda of points even of importance that were already well known to or could be found out by the person directly responsible for the work inspected. One example: the papers in a case folder are out of the prescribed order. The file clerk sees this, or can determine it, by learning the instructions and checking through the case folders. The same is true of many other things. The inspector sees the conditions as they exist, but what he does not see are the causes.

One of these causes is a general practice which I want to discuss. It is followed by all (including inspectors) who go from place to place, either traveling or transferring. They have pet ideas which they love to have others adopt, and these conflict (in the minds of those others) with the pet ideas of other officers similarly moving about. Such an idea may be a liking for a particular piece of equipment which the shifting officer has seen in use on other Forests. He tells the Ranger about it. There is an immediate requisition for the same by that Ranger. Suppose he gets it. It may not work to as much advantage as hoped. The next visiting officer does not think much of it. Maybe he laughs the moment he sees it. Or he may not see it, but he is likely to have a pet idea of his own. He says "I'll tell you what you ought to have, etc.," and so another requisition is submitted.

Instead of a piece of equipment the pet idea may be a special form, method, etc. It is all the same. Each visiting officer is enthusiastic about his "superior" suggestion and, of course, is not responsible for the funny ideas others had before him, and is not concerned about the resulting accumulation of ideas with their intervening changes and differences. As stated above, the conflict and confusion is in the mind of the Ranger or clerk upon whom the ideas are inflicted.

A visiting officer has a quasi-superior position and has traveled more widely than the Ranger or clerk, and the latter do not want to be thought out of harmony with what is, so far as they know to the contrary, the progressing general policy. So they sigh and adopt the thing. Afterwards, when it has become obscured in the confusion of the superior ideas of subsequent visitors, or of the limitless demands arising, if one were to mention to the Ranger or clerk any one idea in particular and inquire as to how it worked, he would probably receive only a smile and "Oh, all right, I guess," or one may only sense a deep and prolonged silence about it.

Ideas which are new are thrown into a program already made up, and take up a large part of the time of the Ranger or clerk and prevent his mind running in an unbroken, forceful, and effective manner on the work at hand. There results also an accumulation of unused equipment in stock and a mass of typed stuff in the files which succeeding employees shy at.

Every such shifting officer should be muzzled. I think it is not realized how much time is spent by the subordinates on a Forest listening to the talk of others on matters not the most productive toward getting the work at hand dispatched, while their regular work accumulates undone.

Every time I hear of a property custodian's records being in a confused mess I feel more and more certain that every person who has been on that particular Forest is in a large or small measure responsible for the mess. If the individual in the Service is to be held responsible for property and other things, the rest of us must be lariated and muzzled.

If one wishes an outlet for his views, let him tell them to his immediate superior only; or write them for the Bulletin. In the latter case he should be required to type, edit, correct, and re-type them and send them straight to the Editor; permitting the rest of us to work for the Government.

WHERE IS THE PROMISED FIRE-CONTROL EQUIPMENT?

Here is the latest:

1-man mess outfits purchased and delivered.

2-man mess outfits undergoing manufacture in Portland, Oregon. About one-half of the order, or 300 sets, have been completed. Part of these have gone forward to the Districts.

6-man, 10-man, and 15-man mess outfits are awaiting the arrival of forks, spoons, kettle chains and whetstones.

The tinsmiths who have the contract for the containers for the 10-man outfits have experienced difficulty in securing delivery of tin of the specifications required. They have also had trouble buying suitable hasps for the covers for the containers of the 10-man outfits. A supply of hasps has recently been located at a point in Massachusetts, and is now en route by express.

The firm that secured the contract for supplying the table utensils found the market short of suitable ware. They have recently reported that the shipment started west from the Atlantic seaboard about August 1.

The whetstones, which are in fact carborundum, are yet to be manufactured. The factory has not specified a probable date of delivery.

Craters and packers are busily engaged in preparing for shipment the cooking equipment as far as complete. When the small articles mentioned above arrive there will be no further delay in starting the enormous bulk of tinware towards its various destinations.

The Koch combination tools are one-third complete. The hazel hoes have been supplied by the bidders, but the shovels and handles, although shipped more than a month ago, have not arrived in Ogden yet.

The portable telephones, some ordered in February and some in April, have only in part been delivered. The Western Electric Company claims the delay is due to a shortage of aluminum. It is suspected, however, that the real reason of the delay is because the company is giving a large part of its force of specialists to the manufacture of wireless equipment, the profit on which is even greater than that derived from portable telephones. This small implement costs about $24.00.--E.W.K.

RELATION OF RELATIVE HUMIDITY TO INFLAMMABILITY

By J. V. Hofmann, Wind River Exp. Station

On September 16, 1921, the writer visited a small fire on Panther Creek on the Columbia National Forest. The fire had spread on a southeast slope in grass and brush, and had reached the top of the ridge in some localities. A line had been put around the fire during the previous day and night and some areas required back firing when the writer reached the fire.

In order to determine the relation between the inflammability of the material, such as grass, dry leaves and twigs, and the relative humidity, readings were taken with a sling psychometer and the burning conditions checked with actual attempts to burn. The results obtained are shown in the following tabulation:

RELATION OF RELATIVE HUMIDITY TO INFLAMMABILITY (Cont.)

Time	Relative humidity	Wind velocity. Miles per hour. Estimated	Air Temp. Degrees F.	Condition of fire
10 A.M.	60	2	63	Fire very quiet, burning in logs only, not running. Back fire would not spread in grass or leaves.
10:30 A.M.	51	6	75	Fire quiet. Burning some in grass and leaves; not running good enough for back firing.
11:30 A.M.	47	6	74	Fire burning in grass and leaves. Quiet on the whole. Open grass areas can be successfully back fired.
12:25 P.M.	40	5	75	Same as at 11:30 A.M.
1:40 P.M.	37	5	78	Fire running in open areas in grass and leaves, not in brush.
3 P.M.	29	5	75	Fire has picked up in various places. Running in brush and jumped line on north end. Burned fiercely for a while. Material ignites readily with match.
4 P.M.	36	2	77	Fire not spreading generally. More quiet than at 3 P.M. Grass and leaves easily ignited.
5 P.M.	47	2	70	Fire quiet on the whole. Grass and leaves will ignite with match, but fire does not spread readily.

The day was clear and sunny, and conditions for the spread of fire were apparently good. The spread of the fire and its behavior showed a very definite correlation to the relative humidity. While the relative humidity was above 40 the fire was quiet, and when it dropped below 30 the most rapid spread of the fire occurred.

AN ODD TREE

By R. D. Forbes, Southern Forest Exp. Sta.

A curiosity among American trees is the sand pine (Pinus clausa) of Florida and adjoining states. It is a tree of rapid growth on the very poorest of soils. The best way to reproduce it seems to be to burn it up, and when it burns there is an honest to goodness crown fire in a country where fires ordinarily are devoid of anything approaching the spectacular.

Sand pine, or scrub pine, as the tree appears to be best known locally, is found in scattering stands on most of the poor soils of Florida, Alabama, and Georgia, but "The Big Scrub" lies near Ocala, Florida, next door to fragrant orange orchards. The big scrub is an area of about 150,000 acres, and makes up the Ocala Division of the Florida National Forest. The Forest is nearly a pure stand of sand pine, but scattered all through it are "islands" of longleaf pine (on the high ground) or of slash pine (on the low ground). The occurrence of these islands is no doubt linked with soil character, and the boundary between the "scrub" and the other pines is generally very sharply marked. At one point on the forest an old plantation of maritime pine, eucalyptus, and other foreign species, is now reseeding in part to slash pine, which may be significant.

Like almost all southern trees, sand pine grows very fast, but this growth is remarkable when it is considered that the soil on which the tree thrives appears to be too poor even for a tree like longleaf pine, which is recognized as an inhabitant of the driest and sandiest areas. Forest Examiner Mattoon has fairly extensive unpublished figures on growth, but a few trees which I chose at random on a recent trip to the Ocala would indicate a breast height diameter of 9 inches in 30 years or less. This is, of course, for dominant trees. The corresponding height is often 60 feet. It may be a surprise to some to know that trees in this part of Florida make at least three growths a year, and Mr. Ashe has observed four.

Unlike our other southern pines, sand pine is very easily fire-killed. The great fire of May, 1921, wiped out thousands of acres of immature timber, and left as dreary a scar as ever came of any fire. The woods apparently will not burn until the warm weather has caused the leaves to exude pitch; at least, that was the way I understood Deputy Supervisor Rogers to explain the inflammability of the Forest in mid-spring, and not before. The large number of limbs - slender and persistent - enables the fire to flare up into the tops, and the tremendous winds do the rest. A thin bark also makes the sand pine fall an easy victim to fire. The tree is yet to be found which is too large for fire to kill.

Sand pine reproduction resembles life insurance - the trees have to die to get it. Like lodgepole pine in Colorado and jack pine in Michigan, it holds its cones unopened on the tree for years, until a fire comes along and opens them. Those parts of the Ocala where the trees were big enough to bear much seed - about 4 inches - are to-day green with myriads of sand pine seedlings from the seeds dropped when the 1921 fire opened the cones. Fire in such stands sweeps clean, and the white sand drifts until the seedlings and gradually returning herbage hold it once more.

For five years, Mr. Rogers says, it is almost impossible to burn the fire-swept land again. But after that, Oh boy! About the time the longleaf pine is getting fairly safe from occasional winter fires, the sand pine becomes tinder for the rest of its life. If it burns again before it is old enough to have borne cones in quantity, the land becomes a hopeless waste. Some areas on the Ocala look as if they would remain brushland for a century.

In a land hitherto blessed with great virgin stands of splendid longleaf and slash pine, the sand pine is valueless to-day. Limby, weak and brash of wood, and allowed by fire to reach only small size, the tree does not appear very promising. But it flows some turpentine, the wood seems freer from resin than most southern pines, indicating possible use as gound wood (if cheap power can be found), and all the other pines in that region are fast disappearing. Perhaps the despised sand pine will some day come into its own!

FOREST TAX NOTES

Maine's New Tax Law in the Toils

The 1920 Maine legislature passed a so-called Auxiliary State Forest Act, patterned on a similar act of several years ago enacted by the State of Pennsylvania. It provides for the classification, at the owner's option, of privately owned forest lands fulfilling certain requirements. The land alone is to be assessed and taxed annually. The timber to be taxed when cut.

Recently, a large landowner in the southern part of the State has endeavored to take advantage of this law and to classify some 80,000 acres overlapping into several adjoining towns. These towns, however, have declined to acknowledge the validity of the law and have brought suit, raising the question of its constitutionality. It is only surprising that the question has not been raised long since in other States, since it attacks an obvious point of common weakness.

In this connection, a recent adverse decision of the New Jersey Supreme Court, involving a similar constitutional point, is of interest. The question raised there was with reference to the constitutionality of an act exempting from taxation for 5 years all new buildings and the value of improvements to existing structures. The provision of the present New Jersey constitution has been held to authorize the classification of property and the exemption of classes or their taxation at special rates. The reason given by the Court for its decision is that "new buildings are not a class of property, and that the conditions of this limited exemption are an arbitrary discrimination against old buildings."

Forests classified under such legislation as that in Maine, Vermont, Connecticut, Pennsylvania, and Michigan, where the special tax provisions rest upon a constitutional authority to classify property for purposes of taxation, are open to the same constitutional objection. It is perfectly evident that there is no difference, in fact, between a forest property classified under the provisions of the forest taxation law of any one of these States, and another property, equally well managed but not entered for special classification under special tax act. Such difference, if any, as exists between the two properties is not in the physical character of the property, not in their productive use, not public service, but merely in the state of mind of the owners. On that basis the courts might very well follow the New Jersey precedent and declare the forest classification set up by these laws as arbitrary and discriminatory and against the other forests not classified.

Accordingly, the decision in the Maine case, if the unconstitutionality contention of the towns is upheld, will have a far-reaching effect upon practically all existing forest taxation based on optional classification by the individual owner.--L.S.Murphy.

TOO MANY BEAVER?

It was not so many years ago that there was much talk and agitation over the fear that the beaver was soon to become exterminated, at least in the Northeastern States. As a result, New York State passed a law giving complete protection to the beaver, and it has been surprisingly effective.

At present, a view from practically any mountain in the Adirondacks will disclose from one or two to half a dozen or more patches of dead timber in the valley bottoms, both large and small. Each one represents timber killed on lands flooded by the water back of beaver dams. Survey crews, who have the misfortune to hit a beaver pond on line, after wading to their waists or deeper, are loud in their condemnation of the abundance of the pest. People with summer homes on a lake shore close to the edge of the rocky margin are equally disturbed when the lake rises from 2 to 6 feet, and their hard shore line is converted into an ill-smelling boggy fringe of dead timber. Some of the local residents who earn a scanty livelihood by a little farming, and who formerly added to their income by trapping beaver, consider it "adding insult to injury" when they are not only prohibited from trapping the beaver, but the beaver in turn flood their hay land.

On the other hand, according to local men, the beaver is doing more for trout fishing than any other one factor in the region. The beaver ponds in the streams furnish abundant food for the trout which, consequently, grow to large size more rapidly and in greater numbers than would otherwise be the case.

It is an interesting situation, and one which promises sooner or later to demand further legislation, or modification of existing laws.--J.K.

FOREST PRODUCTS LABORATORY

Running Boards Warping: The Buick Motor Company is having some trouble in various parts of the country with warped running boards on cars of its make. Timber Physics has given the company some suggestions on drying, moisture content, and so on, to prevent the trouble.

Advises on Arctic Boat: Advice on timbers and wooden members for the construction of a boat for Arctic travel around and north of Alaska has been given by the Laboratory to the territorial government of Alaska. Mr. D. G. White's studies in the wooden shipbuilding field several years ago permitted the rounding off of a full fledged, professional answer on this rather uncommon subject. Our stenographers don't write every day such salt-tanged phrases as "cant frames," "bilge futtocks," "fore and after-peak water-tight bulkheads," "keelson," and so on.

FOREST PRODUCTS LABORATORY (Cont.)

Oak Versus Douglas Fir for Barrels: Timber Mechanics has just completed a study in cooperation with the Western Cooperage Co., at Portland, Oregon, of Douglas fir barrels. The report as issued gives for comparative purposes data obtained several years ago on a similar study of oak barrels. The results of these tests indicate that Douglas fir barrels well made of good grade stock can be expected to give service under shipping conditions equivalent to or better than the average oak barrel but not quite as good service as high grade barrels of first quality oak.

DISTRICT 1 - NORTHERN DISTRICT

Girard Returns from Six Weeks' Trip: Girard has returned from a six weeks' trip to District 6. The purpose of this trip was to assist in the appraisal of a large body of timber on the Malheur National Forest, located on the Silvies River in the Upper Bear Valley, approximately 60 miles from Burns, Oregon.

Girard states that the Malheur Forest contains probably one of the largest solid bodies of western yellow pine in the country; that there is probably at least six billion feet of timber tributary to Burns, Oregon, ninety per cent of which is yellow pine of good quality.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Conference on Indian Lands: Col. Greeley and Assistant Forester Kneipp, as well as Assistant District Forester Stahl, were recently on the Minnesota Forest conferring with representatives of the Indian Service looking toward a settlement of the status of the Minnesota Forest. It is expected that Lumberman Donery will represent the Forest Service in a joint reappraisal of Indian lands reserved as a part of the Minnesota National Forest.

Planting on the Pike: The planting operations on the Pike Forest were completed about the middle of June, a total of 734 acres having been planted at an average cost of $16.29 per acre. The average number of trees planted per acre was 750. Where 3-year old Douglas fir seedlings were used, the cost was only $14.12 per acre. With the development of a better grade of seedling stock, it is probable that the greater portion of the trees planted in the future will be seedlings rather than transplants which have been used heretofore. This was the most difficult site which has been planted on the Pike for a number of years on account of the steep slopes and great quantity of brush and down material. Transportation was also expensive, as it was necessary to hire a special train on the Pikes Peak Cog Road before the tourist season opened in order to ship in the trees and supplies.

H. R. Kylie has been assigned to the Office of Public Relations as assistant to Mr. Wheeler.

RANGER BILL SAYS:

I can't find any of these marks in the Brand Book, said our new Grazin' Asst., holdin' up my Chinese laundry ticket.

I knew you was home as soon as I saw your uniform hanging on the clothesline, remarked Lem Small today.

Whenever you see a Forest officer shy at a dishcloth its a sure sign the honeymoon's over, says my wife.

DISTRICT 3 - SOUTHWESTERN DISTRICT

A Parable: Once upon a time a man who was seven feet tall and four feet wide took a trip on a National Forest. He inquired his way of a Forest Ranger and was told that there were many trails all blazed and easy to see and if he would but follow them he would come quickly to his destination. The stranger departed happily, but soon the blazes ran out and he became lost and spent weary days in the mountains without food or water. He became starved and was chased by wild beasts, fell over cliffs and was scratched by brambles and his features were sorely disfigured by overhanging branches. Eventually he came out on the other side and after medical attention he sought out this same Ranger and said to him: "The trails were not blazed, neither were they cleared out." He then seized the poor unfortunate creature and tore him limb from limb. Moral: Blaze your trails, lest a member of the Supervisor's office should take Tanlac and grow to be seven feet tall and four feet wide.--Santa Fe.

Free Stock on D-3 Forests: District 3 has the largest number of stock grazing free on National Forests of any of the districts. There are 34,363 head of cattle and horses and 6,979 head of sheep and goats grazed under Regulation G-5 by 6,414 owners. 1,200 head of cattle and horses and 10,000 head of sheep and goats are grazed free of charge by Indians. The large numbers of exempt stock in District 3 are probably accounted for by the fact that the majority of the permittees who use the forest range actually live within the forest boundaries.

Wants to be Fire Ranger: Captain Frank P. Tuohy, 24th Infantry, U. S. A., stationed at Camp Furlong, Columbus, N. M., has tendered his services as a fire ranger at large while on an extended automobile trip this summer. The Captain expects to travel through the States of New Mexico, Colorado, Wyoming, Utah, Nevada, Washington, California and Arizona. The Washington office has thanked him and told him how by keeping close watch on his fellow travelers and reporting flagrant violations to the nearest forest officer he can accomplish something toward the end he desires.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Deputy Supervisor Meets with Accident: While driving from Garden Valley to Banks in the afternoon of June 16, Deputy Supervisor Francis Wallis was seriously injured when his car left the road and took a nose dive down a 60-foot cliff into the South Fork of Payette. Wallis was carried into the river with the car but managed to extricate himself and get ashore, although his left arm was broken in the descent and he was badly cut and bruised about the head and body.

The accident happened not far from the Robert Frazier ranch - the only settler on this stretch of road - and Mrs. Frazier heard his calls after he had dragged himself up the steep, rocky slope into the road. Mr. Frazier took him to Banks in his Ford truck, and Henry Cutler immediately started for Emmett with him by automobile, after wiring the Emmett office. They were met at Horseshoe Bend by a doctor sent out from Emmett, and the patient taken to the local hospital, where his arm was set and several stitches taken in his scalp.

He is resting as easily as can be expected and the doctors say his chances of recovery are good if no infection sets in.

The car has sunk without a trace. His new uniform, bed, cantinas, and other personal and government equipment were swallowed up by the Payette, which is at flood stage. We are all wondering how he managed, crippled as he was, to save himself from the swift water into which he was plunged.

Another Resignation: Mr. Robert A. Brown, Superintendent of road construction, District 4, tendered his resignation effective July 19, and has accepted position as senior highway engineer with the Bureau of Public Roads, with headquarters at Phoenix, Arizona. Mr. Brown first entered the Forest Service on August 21, 1914. He served in the war with the 23rd Engineers in road building in France.

Forest Insects: The insect control project initiated on the Kaibab this spring has been completed. Mr. Edmonston and Mr. Hofer of the Bureau of Entomology had charge of the marking and peeling, and selection of areas where control seemed most urgent. Two separate camps of 19 men each, consisting of one foreman, cook, assistant cook, teamster and 15 men or 5 crews of 3 men each, were maintained.

A total of 5,683 trees were treated, which means felling, trimming off the limbs, peeling the bark from the infested portion of the trunk, and exposing the inner surface to the sun. The average diameter of all trees cut was around 24 inches and the infested length 30 feet. The approximate percentage of infested bark or percentage of total infestation receiving treatment at each camp is estimated at 50 to 60 per cent.--S.S.S.

DISTRICT 5 - CALIFORNIA DISTRICT

Cribbing Hollywood's Stuff: July 17, four young people camping at Kelty Meadow on the Sierra started out on a fishing trip. Three of them soon got blisters on their heels and sat down to rest, but the fourth had the wanderlust and kept right on going. In the course of time and human events (that is to say, about 3 o'clock Tuesday afternoon) he limped into the F. S. camp at Placer Station, all in. Guard Tony Dupzyk fixed him up all nice and phoned Northfork that everything was perfectly jake. But the rest of his party had gone home, throwing fits in every direction, and reported to Roscoe's parents that he was lost, probably dead and possibly drowned! Papa phoned Supe Benedict, and while the latter gave him the straight dope, by the time it got to the receiving station over a clouded power company line, it read that Roscoe was drowned. Matters were further complicated by another phone message from some unknown source to the effect that the body had been found in Bass Lake and identified by the fishing license in the pocket! The plot, having thickened to the present consistency, now unscrambles itself. Papa purchases a coffin and proceeds on high to Northfork, but a few moments' conversation with our urbane Supervisor gets the kinks out of things, and a phone talk with his son and heir is proof positive that the mourners' bench is not for him.--JGC

A Land Office Business: Deer hunting on the California opened with a rush on August 1. On July 30, Forest Clerk Settles issued 104 camp fire permits up to 5 P.M., while Ranger Steele issued 55 permits during the same period. The hunters poured into the Forest in a steady stream and it is reported that there were nearly as many "houn dogs" as there were hunters.

Money for Public Camps: The Automobile Club of Southern California has deposited with the District Fiscal Agent the sum of $500.00 to be used for the construction of improvements on public camps at Twin Lakes and Lake Mary on the Inyo National Forest. This is the second contribution from this Club this year, as they had already furnished funds for improvement of the Mill Creek Camp on the Angeles Forest.

DISTRICT 6 - NORTH PACIFIC DISTRICT

"Calling Mr. Falck!" At the Clerks' meeting, held in Seattle in January 1919, a resolution was adopted (which was vetoed) that the Annual Property Report should show items only on which the status had changed since the previous Annual Report.

Here are the statistics from the Colville in support of the resolution, which shows that a total of 1473 entries were required, duplicating former reports where the status had not changed.

Calendar year	No. entries necessary for report	No. entries actually necessary because of change of status	No. entries, duplicated, no change of status
1918	350	24	326
1919	480	111	379
1920	526	170	356
1921	515	103	412
Total	1,871	408	1,473
Average yearly for four years	468	102	368

--T.F.Barrett.

Eastern Visitor: Col. T. S. Woolsey, Jr., of New Haven, formerly of the Forest Service and the A.E.F., spent ten days in July in D-6, in the District office, and on the Whitman and Santiam Forests. He came in from British Columbia, this being his first visit to the North Pacific region.

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PERSONAL ACCOUNTABILITY

By Col. W. B. Greeley

In writing on this subject a week or so ago, Morrell shows needless alarm over the inshoots or speed balls which may be hurled in his direction. His article lands squarely on the horsehide and scores a safe hit. My verdict is that On-Top stubbed his toe and sprawled over the stone of his own laying. On-Top should have put Hi-Up himself on the carpet. He should have said: "Hi-Up, something is rotten in your balliwick when your own inspectors pass up bad work without doing or saying anything about it. Get busy and correct it or by the beard of the prophet your name shall be In-Bad."

It is easy to talk about personal responsibility as a principle of organization. It is far more difficult to perfect the technique for its consistent and effective application, to make it a working tradition, as Headley would call it. To me the principle means the transmission of motive energy. I once saw a machine for making stamped metal designs in which a central piston transmitted power to a dozen or more small pistons beneath it. Each of these transmitted the force it received upon the malleable metal beneath it. I picture the force of personal accountability through a human organization as a similar process.

The head of the Forest Service, for example, has determined that whatever else the Service may or may not accomplish, it must deliver airtight fire protection. He might issue detailed instructions accordingly and then concentrate the energies of himself and his immediate associates upon the minutiae of their execution. He might tell a District Forester to fire Guard Slow-on-his Feet, to put in another tool cache on Rock Creek, to shift a fire assistant from Supervisor Top-Heavy to Supervisor Lame-Duck, and so on. Or he might say to each District Forester: "You must deliver *to me* the efficient protection of your District. Good or bad, I view the results as *your* work. If *you* can not deliver efficient protection, step down and make way for some one who can." And the District Forester passes on the injunction to each of his Supervisors. "You, personally, must deliver to me the efficient protection of your Forest. The failure of the Negligent Logging Company to burn its slashings last fall or the delay of Ranger Cautious in getting off to an overnight fire are matters of secondary interest to me. You are the man I hold to account for delivering the goods. If you can't deliver, George will wait upon you with the hook."

The first is the centralized control method of organization. We see plenty of it in governmental activities. The second is decentralized responsibility with motive power transmitted into every cylinder of the machine by the personal accountability of men to their superiors. Now obviously a man can not be held to personal account for results and at the same time be told just what he must do in any particular situation. Therefore I say, On-Top stubbed his toe. To illustrate how personal accountability should work, I would rather cite two instances where bad work on a National Forest was brought to the Forester's attention. Each of them indicated rather pointedly the need for a new Supervisor. But the Forester did not tell the District Forester concerned to fire the Supervisor. Instead he said: "Here's a bad situation. It is up to you. You must determine *under* your accountability to me whether you can continue Supervisor Miss-Fire on this job. If you do, well and good; but I will hold you to account for what happens on the Forest."

Recognition of personal accountability as the guiding principle in our organization is not inconsistent with a standardization of methods in doing various kinds of Forest Service work. Three thousand people employed in 26 States in detecting and putting out fires, building roads, trails and telephone lines, selling public timber, directing the use of public ranges, and handling $12,000,000 of receipts and disbursements can not do their work effectively without a code of ways and means, without the common use of clear-cut methods. Some of these are prescribed for us by Congress or by the Secretary. The great bulk of those used in technical or business practice have grown out of our own experience. They are the best tools we have been able to devise for equipping our men in this or that capacity to perform their jobs effectively.

Some of the men in the field have looked askance at work plans and job standards as infringements of personal accountability. "If we are accountable for results," they say, "leave us free to get our results in our own way." A process of standardization evolved in Washington and imposing inflexible requirements upon the men in the field might easily be carried so far as to tip the scales and partially or largely destroy personal accountability as the real motive power in the machine. On the other hand, work plans and job standards originating on each Ranger district or National Forest and put into effect by the officers immediately on the job ought to be a helpful agency to enable men to use their own initiative and make good on their own responsibility. When work plans or job standards cease to be a useful part of the code of ways and means which the Forest Service must have, like any other large organization, or cease to be in harmony with the spirit and working processes of personal accountability, they will have crossed the dead line and should be put back where they belong.

In the nature of things, there are certain practical limits upon the free play of personal accountability, things in which the Forester must redeem his own responsibility by direct action. These are cases particularly where the good name of the Forest Service and its integrity are involved. Instances where men have not played square with the fiscal regulations afford the most striking illustration. This is, of course, simply a matter of creating a vigorous and effective Service standard, or tradition, which once plainly recognized and accepted will enforce itself all the way down the line by its own weight.

As Morrell says, we must develop skill through test and experience in the right way to combine personal accountability with the use of well tried methods of doing things. Often indeed the action of the responsible officer becomes a matter of choosing between different methods of accomplishing a desired result. It should be our principle, as far as each one of us can safely go, in redeeming his own responsibility, to leave the choice of methods to the man lower down who is accountable for the results which either method is designed to bring to pass. A smoothly working technique of personal accountability can not be evolved overnight, but will be perfected from experience and earnest effort to make that principle as real and vital as we can.

I can not agree with the implication in Morrell's article, if he really intends one, that personal accountability is a recent declaration running counter to the established practice of the Forest Service. Nor do I believe that Morrell himself has any real doubt as to whether this idea is more than a "beautiful theory." The Forest Service has grown to mature stature and power largely through the vitamine of personal responsibility. It has not always flourished to the same degree, but it has always been in our systems. There is not much about our present discussion that is new. We are just trying to sharpen and apply more consistently the principle of organization which underlies the growth and virility of the Service.

In the early days of the Service its great strength lay in the commanding ability and vision of its leader. One fight after another was fought to a successful issue because of Gifford Pinchot's generalship and personal power. The great strength of the Forest Service to-day lies in public confidence which has resulted very largely from responsible local contact of Forest officers all the way down the line with their towns, communities, and forest users. The quality and efficiency of our men have had much to do with his; but the responsibility entrusted to them and the initiative developed in them have also had much to do with it. The most farsighted thing Mr. Pinchot ever did to insure the future growth and strength of the organization which he created was the establishment of the District Offices and shoving responsibility out into the field. Personal accountability is part and parcel of the same principle; we are simply giving it a keener edge.

WHEN TAKING PICTURES

By P. J. Fair, D-5

There is such an insistent call for good photographs to illustrate popular articles on Forest Service work by magazine writers that it may not be amiss to tell some of the points that make photographs of value from this standpoint.

First and always, they must be of popular interest. Popular interest is a rather vague term, but it can be obtained by introducing the elements of humor, action, the unusual, or by beauty of landscape.

Probably no element adds more to a picture than by introducing human interest in the way of figures. But the figures should not have the appearance of "having their pictures taken." Nothing kills a picture more than that. The public isn't interested in individuals. If a man is felling a tree or packing a horse, have him felling the tree or packing the horse and not standing and looking at the camera. In a landscape picture a figure makes it a little more intimately appealing, but the figure must fit in and take a secondary place and any conscious posing is fatal. More often than not it is better to have him turn his back to the camera.

Recreation pictures are always popular and their success and interest lies in representing unconscious action, whether it be a lot of kids playing, some campers getting their meals, or a man fishing. Try to get the spirit of the thing.

The beautiful landscape is always appealing, but too often a successful photographic record of it is purely accidental. There is a popular fallacy that a person must have the sun at his back in taking a picture. This is not only untrue, but a real detriment. As long as you shade the lens so the sun does not directly shine upon it you can take a photograph, even though it is almost toward the sun and the result is much better,for the shadows give relief to trees, ridges and all objects.

Be sure and have the focusing scale set for the proper distance and to gain depth of focus stop down the diaphragm. The latter means, of course, lengthening the exposure and probably using a tripod. Exposures obviously vary with subject and lighting, but for open mountain views in sunlight a one-second exposure with a stop of F.32 or U.S. 16 may be tried. To get clouds or distant blue ranges a ray filter or sky filter is very useful. They increase the exposure according to the depth of color of the filter, but the proportion is told in the directions accompanying the filter. They are inexpensive and well worth their small cost.

In landscape work it is well to get some strong object in the immediate foreground to help the perspective - throw the rest of the picture back into its place. An old tree is good for this and especially so if you can compose your picture so that the tree comes near one edge and a branch sprawls across the top. It acts as a frame and the strong contrast sets off the rest of the picture.

One thing we need above all else and that is fire pictures. Of course when there is a big fire going, not only do Forest Officers feel there is no time for taking photographs but that any one who does so is in a measure a slacker. But isn't this a false perspective? Won't we get further in the long run in the fight if we stop and get a few photographs of spectacular fires and the fights against them?

Last summer a certain then District Office man came back utterly worn out, big husky though he was, after thirty days of terrific, grueling work on a certain southern Forest. But in spite of it all he had packed his kodak with him and as a result we have some of our best fire pictures. Can't some one else do this?--P.J.F.

WEATHER ON THE EASTERN TOP

By E. F. McCarthy, Appalachian Exp. Station

A cooperative weather station has been placed on the summit of Mount Mitchell, the highest mountain in the East, by a cooperative arrangement between the North Carolina Geological and Economic Survey, the U. S. Weather Bureau and the Appalachian Forest Experiment Station.

The trip of 80 miles, the packing and setting of equipment and instruction of State Forest Warden D. L. Moser were all accomplished in one day, though most of the credit is due the Experiment Station's Ford truck.

The new motor road to Mount Mitchell made the first stage of the journey easy, but McCarthy and Korstian were obliged to pack the outfit up the last thousand feet, among profuse expressions of sympathy from tourists who had never seen a house carried on a tump line.

While the top of Mount Mitchell lies within the North Carolina state park, it adjoins the Pisgah National Forest and is surrounded by a belt of cut and burned spruce land. Accurate weather data at this point are needed in the study of regeneration in the spruce type, and it is planned to use the data also in the study of fire control. Cooperative stations nearby and lower down will give an excellent opportunity to determine the climatic influence in type distribution. There is little doubt that this station will record a very heavy rainfall, as foresters who have been there will agree.

WASHINGTON NOTES

Chief Engineer T. W. Norcross left Washington on August 19 for a two months' inspection trip covering engineering work on Districts 1, 4, and 6.

J. G. Peters of the Branch of Forest Management has returned from the annual meeting of the Association of State Foresters held in northern Minnesota. Twelve States were represented, and invited guests included representatives from Canadian Board of Railway Commissioners, Dominion Forest Service, American Forestry Association, Massachusetts Forestry Association, and U. S. Forest Service.

Hutchinson and Gill of the Branch of Public Relations spent three days with State Forester Hawes of Connecticut, selecting locations for a forestry scenario to be produced in cooperation with the Connecticut State Forestry Association and the Yale Forest School.

FOREST PRODUCTS LABORATORY

Paul Bunyan and His Big Blue Ox: Paul Bunyan's marvelous exploits from the Lake States days to the times when the steam worked up out of his buried bean kettle and caused what some people called the volcano on Mt. Lassen are retold in a 35-page booklet received in the Library from the Red River Lumber Company. It is now not only good forestry but distinctly "literary" to know about Paul Bunyan. As the book says, "Paul is recognized as a regular myth and students of folk lore are making scientific research of the Paul Bunyon legend."

Cactus Spine Phonograph Needles: "Will you be so kind as to suggest a method or indicate what has been written on toughening or hardening spines (cactus)? I have made a machine for pointing cactus spines for phonograph needles. Some will play 40 records clearly; others will not last one record. I would be satisfied if they could be made to last 10 or 12 records.

"The ones I am enclosing have not been treated except for grinding. They are from spines that have been picked over a year and you may find some brittle."--(From a letter to the Laboratory)

Making Paper - Sans Forest, Sans Water Power: The first newsprint mill in Chicago is now in operation and has a capacity of 250 tons daily. The raw stock from which the paper is made consists chiefly of waste paper, shavings, ground wood, and sulphite. The paper machine has a 132-inch wire with thirty 40-inch driers. All of the water used in the plant is from city mains, and the mill manufactures its own power. The daily issues of newspapers in Chicago exceed the 2,000,000 mark and the Chicago Daily News has already made a large 20-year contract with this mill.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

New Paper Mill in Denver: The Myers Pulp & Paper Company has recently been incorporated under the laws of the State of Colorado, with main office in Denver. They have purchased a site for a paper mill just outside the city limits on the D. & S. L. R. R., and tributary to the Union Pacific and the C. B. & Q., and expect to start construction of a pulp and paper mill this week. The company has a contract with the Colorado Power Company to furnish them power and is reported to have purchased a considerable acreage of timberland in the vicinity of Rollinsville, where arrangements have been made for a sufficient supply of waste paper to make their operation continuous. They plan to make containers and other grades of board stock, wall board, wrapping paper, etc., out of reclaimed waste paper, with the use of a comparatively small percentage of new pulp. If this paper mill is installed and operated as planned, it should help materially in securing close utilization in timber sales on the National Forests so located as to make it possible to ship in pulpwood at a low freight rate. The following local species, - Engelmann spruce, lodgepole pine, Douglas fir, alpine fir, white fir and poplar can be used and probably to a top diameter of about 4".

Good Forest Fire Story: John McLaren, Fire Chief in D-2, is the subject of an article, illustrated with Forest Service pictures, appearing in the July issue of "People's Popular Monthly." While the article is written up as a personal sketch, it carries a good deal of fire propaganda at a season of the year when it will do the most good. The article was accepted by the Editor of the magazine after specifically indicating that only such a type of story would be suitable. "Mac" who is always on the lookout for getting hold of fire prevention ideas, says this is the reason he allowed his name to get in the paper.

RANGER BILL SAYS:

The best epitaph I can think of for a Supervisor is "Inspected to Death."

Sometime when you think you're overworked, trade jobs with your wife for a day.

Now that radio's gettin' common, I understand Operation's figurin' on building lots more telephone lines.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Illiterate Coronado: Possibly the Lincoln could spare its Texas dictionary for a while or at least furnish a vocabulary of common terms so that such extremely embarrassing situations may be avoided in future. The Coronado Bulletin complains the perplexing predicament by saying, "It shore is hard to spell these Texas names. After writing the El Paso Cattle and Loan Company, we were informed by a permittee: 'You have got this Compeney spelt Rong it is Elpaso Cattel Lone Co.'"

Lightning Strikes Lookout Tower: Charles Peach, fire lookout on Bakers Butte on the Coconino, had a narrow escape recently when lightning struck the new steel lookout tower and burnt out the telephone and extension bells and shattered all the window lights. It is believed that the protection afforded by lightning rods saved the tower from being demolished.--Coconino.

Probably the steel frame of the tower was a more effective lightning conductor than the rods, since it has been definitely determined that there is practically no danger of lightning damage within steel-ribbed buildings. The Eifel Tower at Paris, France, for instance, has been struck many times by lightning, yet no one in it has ever been hurt, nor has the tower been damaged. This is a steel-framed structure.

Sometimes Best to Tell the Neighbors: While it is usually wise not to speak one's business all around, in view of one of the provisions of the New Mexico Fire Law, Mr. E. Padilla, of Lincoln, New Mexico, would have found it profitable to have been less close-mouthed. He was fined $25.00 on June 26 by the justice of the peace for burning a defective chicken house on his patented land without giving notice to the adjacent landowners.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Study to be Made of Fish Foods: Cooperating with the Bureau of Fisheries the local Forest Officers on the Fishlake Forest have arranged to obtain a considerable number of fish stomachs which will be preserved in formalin and sent to the Bureau of Fisheries for examination by their experts. In view of the very heavy stocking being undertaken at Fish Lake, this should give interesting information regarding the relative importance of the various fish foods, the season when each is utilized, whether cannibalism occurs to a serious extent or not, and, if such studies were made in the future, whether changes were taking place in the supply.

Such work opens up a new field for cooperation and it is possible that other such projects can be carried out with slight effort on our part.--S.B.L.

"The Wicked Flee Where No Man Pursueth": Deputy J. W. Stokes reports a rather interesting case which the bashful Ranger has failed to report on this date. It seems that some hard-headed users of the Forest decided to purloin some green timber without the formality of a sale or having it marked. They cut and loaded the logs and hauled them outside of the forest and down the canyon and left them, while they returned to camp. When they returned to their wagon they found that the doubletrees and the binding chain had been removed. Having a good, wholesome respect for the astuteness of Ranger Boosinger (also a good, wholesome guilty conscience), they immediately figured out that he had taken the above equipment and was holding it until they should "fess up." They therefore decided that they had better make a clean breast of the whole business. This they did. It happens, however, that Ranger Boosinger knew nothing about the case until they told him. Some one had actually stolen the doubletrees and chain, but the Ranger is now busy working up a trespass case.

More Fire Law Enforcement: On July 11 Supervisor Garver, at 9:30 a. m., discovered an unextinguished camp fire in the head of Goose Creek: 9:35 a. m. he arrived at the fire and by 10 o'clock the fire was out. A witness had been obtained to testify as to the fire and he was on the track of the people who left the fire. At 10:30 a. m. the outfit was overtaken and after some judicious questioning admitted their neglect, and by 11 o'clock had pleaded guilty over the phone to justice of the peace Mallory at Twin Falls. Upon the filing of the complaint the justice sadd$20.00 and costs, making a total of $25.00 to remind Byron Averett that it is against the law to leave a camp fire unextinguished.

DISTRICT 5 - CALIFORNIA DISTRICT

Bear Objects to Camera: It was tough on the bear and hard luck for the Rangers, too. All they wanted was to get Brown Bear's picture, and all the bear wanted was to get - away. The tragic result was no picture and Brown Bear's untimely demise.

This much, and more, has been gleaned from a game case report just received by Supervisor Jones.

Dick McCoy, National Forest Guard, and Arthur Lubken, expert cowman, were riding up in the high country near Dutch Meadow when a brown bear ambled out of the timber. Lubken grabbed up his lariat and the two horsemen went right after the bear. After a smashing hot chase through weeds, brush and saplings, they managed to corner the bear. A snappy sudden drop of the lariat, and Brown Bear was roped.

The mountaineers' horses did not much relish this side issue in the line of the day's work, but regardless of that, the boys finally succeeded in doing what was farthest from the bear's intentions, and roped him to a tree. Leaving the bear in the midst of his own special course of calisthenics, and the rope, McCoy and Lubken hurried away to their camp for a camera. All they wanted was Brown Bear's picture.

They returned later with the camera. The bear was still there all right - but he was dead!

The report says, "defendants roped and tied a bear with their lariats about 10 A.M. for the purpose of photographing him; their intentions were far from injuring the bear. But upon their return the bear was dead (presumably from the effects of their roping activities, which is not in itself an act likely to produce the death of a bear, but perhaps caused the bear to become overheated)."

DISTRICT 5 (Cont.)

McCoy and Lubken knew they had violated the game laws, or at least the bear had up and died an unnatural death out of season, which a bear has got no business doing if game laws are to be cleared. So like all law-abiding citizens the two reported the incident to District Ranger E. E. Cuff of Lone Pine. Pursuant to law he swore out a complaint. McCoy and Lubken pleaded guilty before the justice, who after hearing the complete circumstances fined them $10.00 and suspended sentence.--H.V.B.

Frank J. MacKenzie, who has already painted several fine backgrounds for our exhibits, has just completed a 10 x 30 ft. canvas for D-1. The scene shows the effects of a destructive fire in the white pine of that region, with Como Peaks and Como Lake in the background. All who have seen it agree that it surpasses all previous efforts and that Mr. MacKenzie is to be congratulated on his successful handling of the subject. The new exhibit will be installed for the first time at the convention of the National Editorial Association at Missoula. Mr. Fair of this office has left to supervise the initial installation.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Supporting Forestry: "The Forest Service has come to the conclusion that 'punch' for the movement must come from an aroused local sentiment. Reforestation and the utilization of logged-off lands are the problems, and, of course, fire protection is the backbone of the whole thing. The latter I believe is a national matter and the great need is for an enlightened and aggressive public sentiment."

The above is a part of Col. Greeley's talk before a luncheon meeting of some fifty representative lumbermen of Portland. F. C. Knapp of the Peninsula Lumber Company, who introduced Col. Greeley, at the conclusion of the Colonel's talk said to those present:

"The sentiment of lumbermen here is unanimous. We are with you and with the Forest Service in this movement."

Forest Guides: At the request of the Oregon Tourist & Information Bureau a list of forest guides was drawn up and furnished the Bureau to supply the many demands for such information. This information consisted of names and addresses of responsible guides with statement of what they could furnish in the way of saddle and pack stock and camp equipment. The names were furnished by the Supervisors. The area included is the Cascade region in Oregon and Columbia and Rainier Forests in Washington.

Timber Surveys: A timber survey party in charge of Forest Examiner Drake and including National Forest Examiner Matz, Forest Examiners Wohlenberg, Furst and Bright, Rangers Gribble and Wirth, and Field Assistant Jankowsky, are at work in Upper Bear Valley on the Malheur Forest. It is expected that the party will cruise an area which will include about 800 million feet. When work started there was about three feet of snow on the ground, but this is fast disappearing. The party is now making its headquarters at the Bear Valley Ranger Station.

Live News: The Portland Oregonian of Sunday, August 6, carried eight news items, totaling 70 inches in length, about Forest Service work or National Forest activities. The Oregon Journal of the same date carried nine news items, totaling 48 inches of Forest Service news. Most of these were from the Oregonian's correspondents in Supervisors' headquarters towns.

EXPENDITURES FROM THE FIRE FUND

(As of August 20, 1922)

District 1	$174,000
" 2	609
" 3	5,739
" 4	1,400
" 5	32,000
" 6	105,986
" 7	106
" 8	0
	$319,840

Roy Headley.

WANTED - A LITTLE PUNCH

J. G. Peters, Washington

Where donkey engines or railroads are used in National Forest timber sales contracts provide for the carrying of fire tools on the donkey engines and on the locomotives. The usual requirement for non-oil-burning locomotives is 100 feet of fire hose, 6 buckets and 6 shovels. In one particular case which I have in mind the Forest officer in charge had begged, beseeched and urged the company to put the necessary hose and fire tools on the locomotives. He had done this by letters, memoranda and personal conferences with the local foreman and with the head of the company. At the time of my inspection of the sale no action had been taken by the company. The locomotives were without buckets and shovels and without a sufficient amount of fire hose. These precautions are considered in the nature of very primary fire protection measures. Upon arrival at the locomotive engines the "F. O. in C." could stand it no longer. His patience was entirely gone. He said to the foreman: "I am sorry, Mr. Blank, but you'll have to take that engine out of the woods at noon and keep it out until you can get it fixed with the necessary hose and tools as the Forest Service requires."

A little more of that kind of punch would save the Forest Service lots of money in sale administration, and would avoid many fires which occur on timber sale areas. If the "F. O. in C." lost his patience on a few other features of timber sale administration, the results would be better and the cost to the Forest Service would be less.

Service Bulletin
U. S. FOREST SERVICE
(Contents Confidential)

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PERSONAL ACCOUNTABILITY

(A Nibble at Morrell's Bait)

By C. M. Granger, D-2

Yesterday I read Morrell's query in the August 14 issue while I was riding that tiresome little old narrow-gauge railroad that staggers from Durango to Alamosa. This morning I am cooling my heels at Pueblo because the train is five hours late. Circumstances have, therefore, put me into an argumentative mood, and I'm bold to attack the subject.

Not knowing what Mr. Line-Worker did to merit wrath, nor how lax Mr. Next-up had been in handling his personnel, nor what kind of herd Mr. Hi-Up was riding on his organization, it is impossible to discuss intelligently what should have been done to Next-Up by Hi-Up and to Hi-Up by On-Top. If Hi-Up had made his principles and policies perfectly clear to his organization and was consistently inspecting and following up to see that they were applied, then I can't see that he was due for any jolt from On-Top. If Next-Up had been likewise on the job and had promptly caught up Line-Worker the first time, he also could come clean. BUT - Next-Up fell down completely in letting the first offense go by, and unless the Service has recovered from its wicked ways overnight, I'll bet an Eskimo pie that Brother Hi-Up was not fully on the job of keeping tab on the boys. This leads me to the conclusion that Father On-Top pretty nearly had to tell Hi-Up what to do - sad, indeed, as such a necessity is.

First, last and always, I'm against having "standards" (I hate to use the much harried word) handed down from above. The organization ought to function in all its divisions so that the Chief should not have to deal out doses of explicit instructions on just how to do things. He ought to enunciate principles and policies and let the field build its own machinery for carrying them out. BUT - he has got to see that they are carried out. In personnel matters the Service has done a woeful lot of bungling. Haven't you seen rangers who were steadily falling down until it reached a personnel case stage and then the record (or lack of record) showed that no one had ever told that Ranger in so many frank, constructive words that he was ruining himself? Haven't you heard a man under fire say just that thing? Haven't you D.O. men seen Supervisors who were steadily slipping? Haven't you heard Lands or Grazing or Operation remark that So-and-So had sure balled up that case, or that So-and-So wasn't worth a d--- and never would be, but without anyone from the D.O. going to poor old So-and-So to tell him just what was happening to him and how he could help it? He has had jolts handed him from time to time by each office as cases arose, but they only served to bruise him, leaving a sense of bump down rather than push up.

The truth of the matter is that the Service has handled its personnel problems in a most unscientific and inhuman fashion. We have often hacked a man to pieces by bits by knocking off a chunk whenever a particularly upsetting piece of work came along, instead of acting as any doctor should and thoroughly examining the patient all over before prescribing a cure. We have let poor men get in and stay in. We have let good men go bad and fall out for lack of all-around treatment. We have visited the sins of the Supervisors on the Rangers, and of the D.O. on the Supervisors.

PERSONAL ACCOUNTABILITY (Cont.)

That is why, as I see it, the Big Boss has had to lay down the rule of a six-months review of every man's work. It may be why he had had to tell Hi-Up what to do in the specific case. It is poor functioning in the organization for such a rule to have been necessary; it is a wrong principle; but it seems to me it was necessary, and still is, and will be until we all get busier and heal our own ailments - we in the Districts - instead of having to have the Boss feed us pills. And Next-Up's and Hi-Up's sins of omission should most times be as severely punished as Line-Worker's sins of commission.

STANDARDS AND THE SUBCONSCIOUS

By Roy Headley, Washington

I wonder how much of our fear of and opposition to standards is due to a subconscious desire to hide the fact that our work will not stand up as we would like it to under examination; and we therefore resist anything which means that we have to measure up to and be measured by definite understandable standards.

We are learning nowadays to find in the subconscious the reasons for most of our beliefs and prejudices - perhaps our attitude toward standards is another instance of this. There are men who advance the argument that a man is made into a machine by standards and the other similar arguments against standards. They are not satisfied by the counter proposition that standards in the Forest Service (unlike most of the standards which control men in business) are to be established first and often finally by the man on the job himself. Standards in the Forest Service are not handed down from a desk above; they grow out of experience on the job itself; they are simply a refusal to draw the mantle of altruistic vagueness over the goodness and the badness of the work done and to be done. Has the subconscious something to do with the fear of them?

THE LOSS OF THE "RANGER 3"

(The following is a detailed account of the circumstances attendant upon the loss of the Forest Service Launch "Ranger 3" in Alaskan waters.)

We left camp in Red Bay on the morning of August 8, on the Ranger 3, there being 8 men aboard, and proceeded to the mouth of a small creek which enters the tide water about 1½ miles east of Pt. Baker. Messrs. Zellar, Williams, King, Thorpe and Lloyd went ashore at this point for the purpose of running a string traverse up the creek and cruising the timber in the valley and on the slopes.***** Capt. E. P. Clark, R. H. Runyon and W. A. Brown remained aboard the boat. ***** it was found necessary during the course of the day to proceed to a previously located triangulation station on Strait Island, the station being the light on the Island ******

"Mariposa Reef" so-called, extends nearly ¾ mile southeastward from the light on the island, and Capt. Clark held a course west of south in order to clear the reef. The tide was running from 4 to 6 miles per hour on his port beam and judging that he had cleared the reef had changed his course, taking the force of the tide on his port bow, when the boat struck the outermost point of the reef that bares at low tide. Capt. Clark saw his peril too late, his effort to throw out the clutch and clear the rock being of no avail. The boat climbed by the bow and dropped sharply by the stern, throwing Runyon, who was on deck, into the swift tidal current. Clark was alone in the pilot house. Brown, who was below in the cabin, emerged from the after-hatch at once and was able to see at a glance the perilous position of Runyon. He immediately cast loose in a skiff and rescued him at a distance of about 100 feet from the boat. Clark went below to ascertain whether or not the hull had been punctured, but found it had not been. By this time the boat was resting on her starboard rail, mast horizontal. Clark was still below when Brown, after strenuous efforts, succeeded in returning to the side of the boat with him, and fortunately was not hurt. They at once ran out her anchor and placed it in a holding position on the reef, which by this time had bared to some extent. Then efforts to right the boat by swinging a water laden skiff from the port side were of no avail, due to the strong current and position of the boat. The boat had partially filled through her windows and ports.

Clark reluctantly left the boat after insistent urging on the part of the other men. After they had landed Runyon on Strait Island and been assured of his comfort with the fox ranchers who reside there, they set out for assistance in a 12-foot skiff. They faced the disheartening task of rowing 3 knots against the current to the trolling camp at Pt. Baker for assistance. ******* They made Port Protection and finally Pt. Baker after 3 hours of the most gruelling labor. ******* It was quite late before they secured the services of Albert Flock, a troller, who with Clark and Brown aboard, picked up the remainder of the party from the shore east of Pt. Baker. They had aboard all that was saved from the boat. ******* We reached our camp in Red Bay about 10 o'clock p.m., and owing to the exposed position of the Ranger 3, the fog which had begun to form in the straits, and the hazard of maneuvering in such a position at night with the Hiawatha, it was decided to man the latter and proceed to the scene of the accident in the morning in order to work at low water and endeavor to recover the Ranger 3.

We left camp in Red Bay at 5:19 a.m. on the 9th aboard the Hiawatha and anchored off Maraposa Reef at 7:05, picked up Runyon from Strait Island and tied a line to the anchor chain of the Ranger 3. The boat had slid into three fathoms at low water, tearing off part of her metal shoe. Our plan of floating her with oil drums was thus abandoned and as the Hiawatha was unable to approach nearer than about 150 yards to the Ranger 3, and as she was not equipped to exert any lifting force, it was decided to secure as soon as possible adequate equipment and attempt to secure the boat before an unfavorable spell of weather.

We weighed anchor at 9:13 a.m., arrived in camp at 11:05 a.m., and left there at 1:55 p.m., having made repairs to the Hiawatha's port engine. Arrived in Wrangell at 6:24 p.m., and sent word of the accident to the District Forester at Juneau and to the Forest Supervisor at Ketchikan, requesting authority to incur the necessary expense to recover the boat and the services of the U.S.L.H.S. Fern or similar craft. While awaiting reply to our messages we received a whole-hearted offer of assistance from Henningsen of the Port Beaudan Cannery in the shape of equipment. Upon our receipt of permission to incur expense and of word that the Tahn and the Fern were hurrying to the scene of the accident, and after securing necessary supplies and fuel, we left Wrangell at 3:15 p.m. on August 10th and arrived at camp in Red Bay at 6:28 p.m.

The Fern received word to come to our assistance at 11:45 p.m. on the 9th while at a position of 6 miles east of Turnabout Island. She arrived off Red Bay at 6:30 a.m., sent her tender to our camp, picked up Williams and Lloyd and proceeded to Strait Island. The men secured a raft of logs from the shores of Strait Island and anchored them in a protected place and returned to the Fern. The Tahn having left Ketchikan at 4:20 a.m. on the 10th arrived on the scene at 4:50 p.m. It was decided to make the attempt to recover the boat at low water on the morrow, so the Fern hauled into Port Protection for the night and the Tahn returned to Red Bay with Williams and Lloyd aboard.

Having arrived in Red Bay from Wrangell with the Hiawatha and learning of the presence of the Fern, we immediately left for Strait Island, but meeting the Tahn off Red Bay and being informed of the plans for the morrow, returned to camp and prepared to depart at an early hour on the 11th to assist in the work of recovery.

We left camp at 5 a.m. on the 11th with 9 men aboard the Tahn, ran through dense fog and picked up the Fern off the reef at 7:25. The Ranger 3 still lay in the same position, almost on an even keel at times, but swaying far to starboard in the swell and tide, with about 4 feet of mast above water. While the Tahn secured the log raft from Strait Island, Capts. Blodgett and Clark, with part of the Fern's crew, made fast to the winch of the Ranger with a wire strap. Due to the swell and increasing speed of the tidal current, they were unable to secure a hold aft. Having bound the logs into two compact bundles by the side of the Fern, the Tahn, with the help of the Fern's tender, delivered them to the men in open boats over Ranger 3. It was found that the anchor chain of the Ranger had parted, leaving but 2 fathoms on the boat end, and the log rafts were bound down by means of this chain and the wire strap previously placed over the winch. The work had been going on with increasing difficulty, owing to the rise of the tide with its increasing speed, but once made fast to the float of logs, it remained to see whether or not they had sufficient buoyancy to lift the boat clear of its rocky bed. With the rise of the tide it was seen that her stern was afloat, and shortly thereafter, about 1 o'clock, the Tahn made fast to the partially submerged raft and was able to move the Ranger 3 from the reef, with her bow pointing southerly toward open water.

The Fern now proceeded to take over the tow line from the Tahn, and was able to start out slowly but steadily away from the reef with two men in an open boat standing by the raft. The Ranger 3 hung almost perpendicularly under the raft, swaying from side to side with the action of the tide and tow. She drew probably about 50 feet of water in this position. The Fern made for Port Protection and the Tahn ran to the head of the Port and anchored, with the expectation of locating a suitable place to beach the boat. The tide set heavily off Pt. Baker and the Fern had difficulty in holding up for the entrance of the port. The tow line was shortened and the procession was fair into the entrance of the harbor when the wire strap about the winch gave way presumably chafed by the constant action of the submerged boat, and the galvanized anchor chain, being the only remaining hold, was unable to sustain the increased weight placed upon it.

After the labor put forth and the sudden raise in hopes as the boat left the reef with apparently every chance for recovery, it was some time before the full realization came that she was really gone. A deal of sentiment in the whole affair. The boat sank in 69 fathoms of water at 3:40 p.m., August 11th, 208 deg. true bearing from the port entrance to Port Protection, distant 1300 yards.

HAZARD AND RISK - WHAT DO THEY MEAN?

By H. T. Gisborne, Priest River Exp. Station

One of the sources of confusion which the fire studies man encounters is involved in the various and diverse meanings of hazard and risk. In an attempt at enlightenment, the available sources of information were consulted. Here are the results in brief.

Mr. R. M. Bissell, President of the Hartford Fire Insurance Company, says: "In the language of fire insurance, the name risk is applied to any piece or kind of property which an insurance policy may cover." This means that a stand of timber is a risk, rain or shine, summer and winter, regardless of lightning, campers, or railroads. The property is the risk. The risk is great if the value is great, and small if the value is small.

Mr. L. W. Zartmann in his volume, "Yale Readings in Insurance," uses risk to mean value at stake. But this author also uses risk to imply the chance of loss of value. This is a distinct departure from the original meaning, as the value which may be lost and the chance of losing that value are two very distinct things which everyone must recognize in dealing with combustible property, such as timber, for instance.

Mr. Sparhawk, in the Journal of Forestry for November, 1920, uses the term risk to include causes of fire. The same author, on page 13 of his report, "The Use of Liability Ratings in Planning Forest Fire Protection," says: "The causes of fire may be classified as the general or blanket risk." Yet on page 37 of the same report the statement is made that "'Risk' is used here in the sense of inflammability and controllability."

Thus we have three authors giving us the five following definitions for the term "risk": value at stake, chance of loss of value, causes of fire, inflammability of materials, and controllability of fire.

"Hazard" is used by Zartmann and Sparhawk to imply: causes of fire, inflammability of materials, location with respect to sources of fire, and a few other unassorted implications. Mr. Bissell includes combustibility and ignitibility under "exposure hazard," which is one element of the physical hazard.

On top of all this comes the term "liability" which Sparhawk uses as follows: "----rate the liability of loss as well as the probable cost of suppression, which together may be termed the total liability."

Out of this heterogeneous conglomeration of confusing implications, how is the ordinary man going to sift his wheat? Space prevents any suggestions or proposals at this time, but it's certain that a lot of them could be offered without any great danger of further rupturing the dictionary. It's a risky hazard sure enough, but there is no great liability attached to it.

RECREATION TO THE RESCUE

Resolution passed at the Third Annual Meeting of the Association of State Foresters held in northern Minnesota August 9 to 13:

"Whereas the members of the Association of State Foresters on their recent trip through northern Minnesota traversed over fifty miles within the Minnesota National Forest and are agreed that upon the lands cut over under the 5 and 10 per cent seed-tree provisions of the laws of 1902 and 1908 the reproduction of Norway pine is abundant, a second growth is assured, and the experiment is a success, and

"Whereas the reservation of the ten sections and the islands in Cass Lake and the protection from fire secured by the proper burning of slash and by the maintenance of fire patrol by the U. S. Forest Service have resulted in establishing the reputation of the Minnesota National Forest as a recreational area of National importance, serving a vast population in the Mississippi Valley and adjoining States, and

"Whereas the permanent status of this great public reservation and park still awaits a final settlement under which the Indians whose lands and timber were ceded to the U. S. are to be paid for these lands and for the timber reserved as seed-trees and as park areas.

"Be it resolved that the Association of State Foresters considers that the early completion of outstanding timber contracts and of the valuation of and payment for this property by the Federal Government is a matter of utmost public importance, in order that the welfare and interests of both the Indians and the public may be protected and the area permanently established as a National Forest and a recreational center for the Middle West."

WASHINGTON NOTES

Associate Forester E. A. Sherman is back from his trip in the "wilds" of Alaska.

Worn to a Frazzle: The value of the road-map folder as a means of advertising the National Forests is well illustrated by the following incident. An official of the Department, while traveling in Virginia, picked up a National Old Trails folder featuring the San Isabel National Forest, Colorado, located some 2,000 miles distant. The appearance of the map indicated that it had been carried and used on an extended motor trip.

Does This Apply to the Forest Service? (The following is an extract from an article which appeared in the World's Work of July, 1922, by Floyd W. Parsons, under the title of "Looking Ahead in Industry.") John F. Preston.

"In business, one of the first and most important laws is that with respect to the placing of responsibility. Each worker must be held responsible for certain results, and should have full authority to get them in his own way. Too often we develop leaners instead of doers. Employees should be held responsible for results rather than for methods used. No policy will prove of greater benefit than that of giving full credit for worth-while accomplishment."

Cheer Up, Boys, You Might Be In Washington! How the government does reward its faithful servants!

Old, wrinkled and black, he had been in the government service for twenty years at $720 a year without a raise. He had been born in slavery, he thought. He didn't know how old he really was. And the chief had called the old man in on the green carpet.

"Don't you think you are too old to work?" asked the chief.

The old man gulped.

"No, suh. I've been a messenger for twenty years, but when I get too old to do my work right I'll come and tell you, boss."

The boss growled: "After all these years don't you think you deserve to be fired instead of getting a raise?"

"No, suhr."

"Are you married?"

"Yes, suhr! Got a wife and a daughter. She lost her job last week and I was just thinkin' I would ask you to help get her another job. We're payin' for a home."

"I think you ought to be fired, don't you?"

At this the old man nearly broke into tears. "No, sir," he said simply, "there aint never been no complaint about my work."

"Well," growled the boss, "I just called you in to say I've recommended you for a ten-dollar-a-month raise."--Washington Star.

FOREST PRODUCTS LABORATORY

Ancona Leaves the Laboratory: Mr. E. P. Ancona has returned to field work in the Southwest, where a transfer to Public Relations work in District 3 has been effected.

With his departure the Laboratory loses not only a valued member of its staff, but the Forest Products Club loses its President and a good fellow.

The Chairman of the Athletic Committee, on behalf of the Forest Products Club, presented Mr. Ancona with the Forest Products Sports medal as a token of appreciation of his services. This is the first award of a medal for service which has been made. Under the rules, such an award can be made only by a majority vote of the Athletic Committee and only to a member leaving the Laboratory.

Ancona carries with him the best wishes of the entire Laboratory for success.

(Mr. Ancona was the Laboratory correspondent for the Bulletin.--Editor.)

Wood from Panama Locks: Wood Technology this week had sent them for identification pieces of wooden braces from the Mira Flores locks tunnel, Panama Canal. The wood had been badly eaten by termites.

Treating Ties in African Jungles: That the English foresters are doing all they possibly can to make Father Time stretch himself as regards the endurance of wood is revealed in a June 22 U. S. consular report from South Africa, which states that a creosoting plant with capacity of 500 tons of wood per month is being erected on the equator at Eldolat, 140 miles northwest of Nairobi in Kenya, Africa. This plant is said to be located in the center of a large forest and will be used to treat 872,000 ties for the 165 miles of railway to be built in that country.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Pike Office Moves: The headquarters of the Pike Forest has been moved from Denver to Colorado Springs.

Henry E. Hardtner of Urania, La., whose pioneer work in the practice of forestry on his own holdings has brought him national fame, has been spending his summer vacation in Colorado. While here, arrangements were made to show him some of the reforestation work on the Pike Forest. Mr. Hardtner was very much interested in the Monument nursery, particularly in the root pruner, which is used to stop the growth of the long taproots and cause the development of a fibrous root system. Mr. Hardtner thought that the root pruner could be used to cut off the long roots of the longleaf pine so that it might be possible to transplant this species. He was amazed at the success of the Forest Service in planting denuded hillsides, and stated that it was an inspiration to him to continue in his work of reforestation.

Wyoming Tie Drives: The Wyoming Tie & Timber Company has taken out the largest drive in the history of the company this year. Approximately 560,000 ties are being driven. These ties are produced on the Washakie Forest, near the head of Wind River, and are being driven down two forks of Dunoir River through box canons and over falls of 150 feet and more in height and driven down Wind River, a total distance of about 140 or 150 miles to Riverton, Wyo., where they are delivered to the Northwestern Railroad for treatment in their treating plant at that point and used largely on their Lander-Omaha branch.

The other Wyoming tie drives include the Standard Timber Company's operations on the Wyoming Forest in District 4, from which ties are driven from 150 to 200 miles down Cottonwood Creek and Green River to the Union Pacific Railroad; and the Wyoming Timber Company's drive which is taken down Douglas Creek to the Union Pacific Railroad at Ft. Steele. Each of these drives includes from 300,000 to 400,000 pieces.

Ranger Bill Says

Those Operation objectives are sure sound, said the D. F. Yep, mostly sound! replied Super. Jim.

Speakin' of publicity, did you ever wear a new uniform on a round-up?

Who says it's hard for a camel to pass through the eye of a needle, remarked the Deputy Super., as the Timber Gulch appraisal came back the fifth time?

DISTRICT 3 - SOUTHWESTERN DISTRICT

What Else Could He Do? If it isn't mineral land what is it? No self-respecting juniper, pinon, oak or pine would grow in a place like that and it sounds dangerous for even an old cow to be about. A mineral claims report just received in a D-3 Supervisor's office says in part: "The ledge is highly mineralized and consists of crushed granite intruded by dark andisite, more or less ferruginated and silicified, in part carries chalcopyrite, argentite, embolite, silver chloromide, chalcocite, sulphides, moybdate, crudely banded brownish iron stained and whitish silicified and kaolinized altered and mineralized othoclase rock breccia and quartz." The Supervisor recommends that patent issue.

Increased Timber Sale Activity: The general prosperity which the country's lumber business is enjoying appears to be reflected in the greatly increased activity of our D-3 timber operators. Not for the past three years at least has there been such a speeding up in our cut as is now taking place. All of the Arizona mills are running full speed, some with extra shifts, except the Apache Lumber Company, which has been able to run only two band saws. The Santa Barbara Tie and Pole Company on the Carson has had from four to five hundred men at work in the woods, requiring four to six forest officers to handle the work. An informal application has been received for a large body of Datil timber, another has an engineer looking over the big block on the west end of the Sitgreaves. Other inquiries for timber and turpentine chances are coming in. This wave of activity apparently has not hit the small operators to nearly the same degree as the big ones.

Evaporimeters Make Good: A curve showing the rate of evaporation, as indicated by the recently installed evaporimeter at Silver City, has been prepared by Mr. Pearson for May and June. On top of this curve have been plotted the "bad days" when the Gila and Datil fires flared up worst. The bad days coincide with the peaks on the evaporation curve in a most surprising manner. While the result is, of course, not yet conclusive, it points toward the feasibility of using evaporimeters to tell us when the woods are most inflammable. No prediction is involved or attempted; but it is worth something when somebody on the fire line orders 50 men to know whether evaporation is trending upward or downward.

A curve compiled by Pearson for Fort Valley shows no resemblance to the Silver City curve. This may indicate that evaporation does not vary uniformly over whole States, as in California. This simply means that if we use evaporimeters, we will have to keep up half a dozen in the district instead of one or two.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

New Fire Suppression Methods: A novel expedient indicating resourcefulness is apparent in Ranger Horel's report of a stubborn fire in his district. An ordinary rowboat was placed on the running gears of a wagon, filled with water, covered with a tarp and hauled about a mile and a half to the fire. Five trips were sufficient to completely extinguish a fire which otherwise would have been exceedingly difficult to extinguish.--Teton.

Author to Visit Natural Bridges: We are informed that Rex Beach, author and sportsman, will visit the Natural bridges. If he camps at Kigalia R. S., it will be a bully chance for some forest officer to find out what a real honest-to-heck writer of fiction looks like. Personally, we would like to hear Mr. Beach spiel a little about some of his experiences in hunting the big Alaskan bear.--La Sal.

Recreation Area Near Pocatello, Idaho: The plans for the recreation area at the head of Mink Creek on the Cache National Forest about fourteen miles from Pocatello have just been completed and a total of fifty-nine lots surveyed. This area has been made accessible by the new road just completed. There are more applicants than lots, and as soon as the original applicants who agreed to take lots before the road construction was undertaken are assigned locations, a general drawing will take place for the remainder.

The permittees propose to form a cooperative association immediately and they expect to take an active part in all phases of plans for the development of the area, particularly that of the piping of water to each lot. Many prominent men of Pocatello are interested in this project, and with a strong association to assist in an area which is at present entirely in the rough, an opportunity for directing the development in an ideal manner is presented.--S.B.L.

DISTRICT 5 - CALIFORNIA DISTRICT

Refuge for Lookout Man: As a refuge for the lookout man during severe thunderstorms, a tunnel is being dug on the Shasta National Forest near the summit of Mount Eddy, which is directly west of Sisson. In the course of the last few years one lookout was severely hurt and another injured in electrical storms at this exposed peak.

Real Excitement While it Lasted: An interesting thing happened the other day which might have had tragic results. A party by the name of Beckwith of Santa Paula was returning from a hunting trip in Matilija Canyon and was hazing a pack mule along ahead of them. To hurry the animal one of the party threw a rock at it. The rock struck the kyak at a point where a box of matches happened to be inside and the matches ignited. A cloud of smoke soon rose from the pack and the mule began an exhibition of bucking and running with all the trimmings. Forest Guard Vincent Ramos happened to be there at the same time, and as he is a cattleman and handy with a riata, he took after the mule and succeeded in stopping it. The owner of the pack made frantic efforts to get the matches out by cutting the kyaks, but the mule refused to stay put long enough. Finally the ropes were cut and the mule shed the pack and the burning blankets were coralled and the fire stamped out. Ramos said he had a good laugh after it was over, but that before that there was no laughing as it looked like there would be fire scattered from one end of the canyon to the other.--Hamilton, Santa Barbara.

Rather a Clever Idea: A Los Angeles hotel, which is a great advertiser, is apparently endeavoring to get around our "no advertising signs campaign" by posting signs which read as follows: "HELP PREVENT FIRES" - Baltimore Hotel, Los Angeles.

Insect Control Work 1922: A report has just been received upon the results of the spring control work done on the Southern Oregon and Northern California Insect Control Project. On the project as a whole, which included timberlands to the west of Klamath Lake; west of Swan Lake, and south of Bly, ten camps of about eighteen men each were established. 69,710 acres were covered with the spring treatment; 7,579 trees containing 6,672,490 board feet were felled and the infested bark containing the broods of destructive bark beetles removed and burned at a total cost of about $30,000, or at the rate of $4.50 per M. From all past experience, it is estimated that the control work will cause a reduction in the infestation of at least 50 per cent. In 1920 a loss of $72,000 worth of timber was experienced on the areas worked this spring. On the above basis this loss will be reduced to about $36,000 for the next three years or a net saving of $78,000 over the cost of this spring's work.

During the summer and until the close of the fire season, a few men are being employed to clean up the borders of the areas worked this spring. The summer method of using solar heat to kill the broods is being employed. In the fall, beginning October 1, units which show a heavy infestation and which are extremely inaccessible during the spring months will be treated again, using the burning method. It is hoped that the reappropriation of the unexpended balance of the Federal Appropriation of $150,000 may be secured so that the work can be continued during the calendar year 1923.--T.D.W.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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A PLEA FOR THE MOUNTAIN STREAM

By W. C. Lowdermilk, D-1

It has been a wonderful hike this June morning up along one of North Idaho's inimitable mountain streams. The recently constructed road follows the water's edge, here cutting through soil bank to the country rock and there crossing to the opposite bank on a picturesque log bridge. Along the way the stream banks are cooled by cloisters of shadowy trees. Not far apart burst out of shaded aisles lateral streamlets whipped into white water by their eagerness to join the river waters. Flowerlets enlivened the pleasures of the eye as the bird songs the pleasures of the ear. It seems that each such experience is more rare than the former one.

But occasionally the road passed over a hot, sultry stretch of land studded with stumps and bristling with whitening spikes of slash fire-killed trees. A hike under a back pack through several miles of this type of scenery would not heighten the joy of living. As the psalmist blessed the shadow of a great rock in a weary land, so would travelers bless the shadow of a green tree. These desolate stretches of road are the occasion of this plea. For if the stream banks are treated in the future as in the past, the loss of the charm of this mountain stream is inevitable.

At this point the man who overprides himself on being "practical" will say that this is all very well, but that it won't pay to change the past practice. He little suspects that he risks the charge of being too theoretical, namely, of holding to the theory that only one way of doing a task exists.

But what is the value of shade-shelter from the wearying rays of a summer sun? Each square foot of shade on our front porches is purchased at a considerable figure. Shade is considered of sufficient value, even about office buildings, to spend considerable sums of money in providing for it. The value placed upon the shade about our water brooks by people generally is difficult to appraise, but it is high. A few moments of consideration suggests the large sums spent annually in railway fares, in traveling expenses, in hotel bills, in stage fares, in the mountain road depreciation of automobiles, in fishing tackle, in varied camp equipment - all that the delights by the living waters of a shade-bordered mountain stream may be had. On the other hand, how much would a man expend in these items to pitch a tent in the glaring sun between charred and whistling snags beside unwholesome waters cluttered up with other windthrown snags?

Nor should this shade along streams cost any considerable sum of money. Provision for it is a very simple matter and inexpensive. It is unnecessary even to sacrifice eleven-dollar white pine stumpage for this purpose. It is only necessary to leave the unmerchantable trees, usually comprising western hemlock and white fir, living to a distance of 150 to 200 feet on each side of streams. To do this, however, it is necessary to dispose of the slash from the felled trees with care, so that in burning it fires neither run over the ground nor kill the remaining trees. It means first, the piling of the slash in clear ground away from down punkey logs and away from standing trees, and second, the burning of these piles in the spring with care. It is a simple measure and feasible. The increased value of the river bank stumpage should bear this slight expense. It is a measure that should be required, if not done voluntarily, as a matter of civic pride and good citizenship.

But aside from these considerations, such a measure will justify itself in the reduced hazard from forest fires. How much less is the possibility of the cigarette stub, tossed aside by an unthinking and irresponsible person, to set the country afire in the clean shaded forest floor than in a littered up sun-baked roadside! It will pay if based on no other grounds. Yet again, it will pay in the increased income to the region and in the good will of the community. However that may be, I hope that in years to come others may share with me the same exhilárating hike along the banks of one of North Idaho's inimitable mountain streams - a valuable heritage of the commonwealth.

CHINA - THE FAVORITE EXAMPLE OF FOREST DEVASTATION

By C. R. Tillotson, Washington

China may lose the unenviable distinction of being the oft-quoted example of the most devastated forest region in the world, according to an article by Prof. John H. Reisner, of the University of Nanking, reprinted in part in the June 15, 1922, number of the Australian Forestry Journal. This article states, in part, that after centuries of neglect, China last year spent about $250,000 in forestry work, sowed seed in about 1,000 nurseries, produced about 100,000,000 young trees, and reforested about 100,000 acres of useless land. These figures as to production of young trees and reforestation indicate that in its initial efforts China is growing and planting fully twice as many forest trees as all State and Federal agencies of the United States combined. Foresters should take notice, and in the future be prepared perhaps to point to China as the bright example of a country which has forged so far to the front in forestry matters that other nations will suffer by comparison. Assuredly, if $250,000 will enable the accomplishment of so much in one year, what strides might not be made with a few million dollars?

HELIOGRAPH IN PROTECTIVE WORK ON THE SAWTOOTH

Ranger Allen T. Osborn, Guard Dan Mizer, and Lookout Art. Smith, have worked out a scheme which has proved of great convenience in keeping in touch with the fire situation while in the field.

Smith uses a regulation heliograph set at the Iron Mountain Lookout. When Osborn or Mizer wish to learn if all is well while away from phone lines, they sight in the direction of the lookout over the top of a small hand mirror and across the tip of a limb or piece of brush stuck into the ground about 15 feet distant, thus throwing a steady flash on the lookout. When seen by the observer he lines up his heliograph on the inquisitive flash coming from yonder ridge or knoll and begins to flash forth the information most likely desired by the operator of the hand mirror. "O K" tells that he has no fires to worry about. "One-half mile S.E." tells that the small fire he is looking for lies hidden one-half mile southeast of his present whereabouts, and so on in endless variety.

While it is difficult to hold steady enough to signal back the precise Morse Code with the hand mirror, yet any protective group can agree upon a few sets of signals, such as a series of dashes for "Send more help," or a series of dots for "We have the fire under control." A hat held in the hand can be used as a shutter.

Doubtless a small portable heliograph set, making use of one very short tripod to be set on a rock or stump could be devised for the use of smoke chasers, etc. The second tripod and shutter are unnecessary, as a hat can be used to cut the flash into dots and dashes.

In the manner indicated above, we have quickly located a lightning fire in rough broken country when a brisk shower falling soon after the lookout's report doused the fire into temporary dormancy.--A.T.O.

ARIZONA CYPRESS

By Lenthall Wyman, Southern Forest Experiment Station

It may be interesting to learn how Arizona cypress has done where it was introduced in Texas. For two and one-half years I was in charge of tree introduction work for the Texas Agricultural Experiment Station, and during that time we tried out a large number of evergreens with rather indifferent success in all parts of the State. The native east Texas pine succeeded, and a few introductions did fairly well; but the best ornamental tree from the standpoint of hardiness, rapidity of growth, general symmetry and attractiveness of foliage was Cupressus arizonica. The silver sheen of the leaves resembled blue spruce, and it took the place of that well-known tree for decorative planting in Texas.

No true fir or spruce will grow in Texas, except in the high mountains above 7500' or, with exceptional care, in a few places along the northern border of the State. Not only did Arizona cypress prove to be the best ornamental evergreen, but also it seemed best suited for windbreak planting, retaining its branches close to the ground. The most striking thing about the tree was that it grew nearly equally well at Lubbock in the Panhandle at 3,000' elevation where the sandy soil received only 20" of rainfall, at Bryan near the Brazos River, where at 300' elevation it grew on heavy clay with hardpan close to the surface under 45" of rainfall, and at Troup on a productive sandy loam with 50" precipitation. Trees five years old from seed measure from 7' to 12' in height. In the treeless region of the Panhandle a tree that will grow at all is welcomed with open arms,and one that will grow as Arizona cypress promises will cause the inhabitants to send a vote of thanks to the dwellers in the State which produces such a tree.

FIRE AND THE FOREST

By E. N. Munns, D-5

What is the damage in a virgin forest due to fire? Many foresters, basing their estimates on their own locality, would give figures from practically nothing up to one hundred per cent and probably each would be correct. This year, in northern California, a one hundred per cent cruise was made on eighty acres where the yellow pine and Douglas fir each made up nearly half of the forest with the incense cedar and the sugar pine as associates. The area was chiefly on a north slope, a fair site, and under fire conditions not greatly unlike those elsewhere in the range of the western yellow pine, especially where mixed with other species. The more recent fires, according to the scars, occurred here in 1851, 1889, and 1920.

Of the trees on this area fire had scarred a large number of them, and the larger and older the trees the greater the proportion that bore exposed evidence of the fires. This summary is given as follows:

	TOTAL NUMBER OF TREES				PER CENT FIRE SCARRED			
Diameter	Y.pine	S.pine	D.fir	I.C.	Y.pine	S.pine	D.fir	I.C.
4-12	1447	471	1450	361	9	8	4	32
12-18	589	126	432	102	34	44	26	63
18-24	320	64	140	60	56	56	40	87
24-30	202	43	58	32	60	77	33	84
30-36	115	35	25	15	63	80	28	87
over 36	32	13	12	7	69	100	25	86

Taking only the trees in the merchantable class (over 18") we find that, roughly, 60 per cent of the yellow pine, 75 per cent of the sugar pine, and 85 per cent of the incense cedar are fire scarred, while but 33 per cent of the Douglas firs are so scarred. This shows the great protective value of the corky bark of the Douglas fir, and the handicap placed on the cedar by its resinous bark. The pines, having neither a corky bark nor a resinous one, are between, the damage being done by the heat killing of the cambium through the cracks and fissures in the bark, and enlarged through the burning of the accumulated pitch in the wood about the scar.

The fire scars in the smaller size classes are due to the presence of suppressed trees with a small diameter but as old as the merchantable trees, as well as the scars formed by the last fire. Especially is this true of the cedar of considerable age but small diameter due to suppression.

Fire and the Forest (Cont.)

In addition to the scars, the snags on this area included 26 yellow pines, 15 sugar pines, 69 Douglas firs, and 11 cedars. In the case of the pines, it is possible that 50 per cent may be due to insect work, while in the cedar 100 per cent is due to fire. The Douglas firs were probably killed by mistletoe, for in addition to these 69 trees, 20 more were noted recently killed by mistletoe.

Down logs, not trees burned down by the last fire, numbered 152, of which 65 were yellow pines, 19 were sugar pines, 60 were Douglas firs, and 8 were cedars. Probably most of these were burned or blown down after previous fires and indirectly the result of the old fires.

The effect of the 1920 fire is quite noticeable, for 51 yellow pines, 7 sugar pines, 20 firs, and 7 cedars, most of which were merchantable trees, were either burned down or so weakened that they fell over afterwards. These 85 down trees make an impressive showing, but not so much so as the standing dead of which there were 763, not including the mistletoe firs or the insect killed pines which numbered 20. Of these standing fire killed trees, 172 were yellow pines, 111 sugar pines, 298 Douglas firs and 182 cedars. Of this number, only about 10 per cent were over 12 inches, so that the merchantable loss was small when compared to the number of trees.

RECREATIVE VALUE OF GAME

By Smith Riley, Biological Survey

It is estimated that 6,000,000 Americans hunt and fish each year. As peoples of the world Americans stand at the head of those seeking relaxation in the open. One out of every sixteen men, women, and children have the aggressiveness and the endurance to enjoy this form of recreation which is said to be a recreating of mental and physical ability for future effort when the individual returns to work.

It is conceded by the highest authorities that human mentality is developed, according to age, by the conveyance of effort through the nerve centers to the brain cells. The extent of the brain cell development depends upon the ease or lack of effort with which energy is conveyed to the cell region. The hunter and fisherman is not only building physical resistance, but he is using many of those same brain cells which he used in his work, and under the most favorable conditions - namely, a keen interest so that when he returns to his work he has greater mental capacity as well as greater physical resistance. The true value of the wild life lies in its being the vehicle that takes such a large per cent of the American people into the open where is developed hardiness, initiative, and mental and physical capacity. In this way our forest resources may be translated directly into man power and human health. Upon the basis of human betterment, ~~but~~ this is the highest use to which our Forests may be put.

Weather Bureau Cooperates In Fire Publicity

September 14, 1922.

Forester,
Department of Agriculture,
Washington, D. C.

Sir:

Receipt is acknowledged of your letter of September 1, 1922, relative to the printing of the slogan "Prevent Forest Fires--It Pays" on the weather maps issued by the Weather Bureau.

I have been pleased to direct that the slogan be placed on all maps issued at the following stations and during the periods indicated:

WESTERN STATES

Stations	Periods
Los Angeles, Calif.	April 1 to October 31
Sacramento, Calif.	May 1 to October 31
San Francisco, Calif.	May 1 to October 31
Denver, Colo.	May 1 to October 31
Pueblo, Colo.	May 1 to October 31
Boise, Idaho	July 1 to September 1
Portland, Oregon	July 1 " " 1

Weather Bureau Cooperates in Fire Publicity (Cont.)

WESTERN STATES (Cont.)

Stations	Periods
Seattle, Wash.	July 1 to September 1
Spokane, Wash.	June 1 " " 1
Walla Walla, Wash.	" 1 " " 1
Lewiston, Idaho	May 31 " " 15

SOUTHERN, EASTERN AND LAKE STATES

Detroit, Mich.	April 1 to June 30; Sept. 1 to Oct. 31.
Boston, Mass.	April 1 to October 15.
Philadelphia, Pa.	March 1 to May 31; Oct. 1 to Dec. 31.
Columbia, S. C.	Feb. 15 to May 31; Oct. 1 to Dec. 31.
Nashville, Tenn.	Feb. 15 to May 31; Oct. 1 to Dec. 31.
Jacksonville, Fla.	Jan. 1 to June 15; Oct. 15 to Nov. 30.
Fort Smith, Ark.	Feb. 1 to April 30; Nov. 1 to Dec. 31.

The stations named are the only ones in the southern, eastern and Lake States, given in your supplementary lists, at which we issue printed weather maps.

Our instructions, which will be issued at once, provide for the printing of the slogan during the remaining portions of the 1922 fire season and during 1923. If the results of this cooperation are satisfactory, we will be very glad to consider its continuance after 1923.

Respectfully,
C. F. MARVIN,
Chief of Bureau.

WASHINGTON NOTES

Assistant Forester Clapp has returned to Washington after a ten weeks' absence in the field.

Governors of 28 States have just been notified that 25 per cent of the $3,421,531 received from timber sales, grazing permits and other sources of National Forest revenue for the past fiscal year will be distributed by the Forest Service, U. S. Department of Agriculture. These moneys are returned to States in which National Forests are located for expenditure upon schools and roads.

An additional 10 per cent of the total receipts is transferred to the Forest Service for the construction of roads and trails within the Forests, and this sum for the present year amounts to $338,576.

The total sums, which aggregate over one million dollars, will be prorated among the 28 States, in proportion to the receipts from the National Forests within their borders. Since the establishing of the National Forests the sums returned to the States have steadily increased. They now aggregate almost 14 million dollars, which has been directly contributed to the development of the States by the National Forests within their borders.

California, where federal timberlands returned to the government $628,765 during the past year, leads the list and will receive $157,191 for the school and road fund and $62,876 for National Forest roads and trails. Oregon is second, while Idaho, Arizona and Colorado follow in the order named.

Expenditures from the Fire Fund

	July 1 to August 31, 1922	January 1 to August 31, 1922
D-1	$195,000	$205,233
D-2	585	4,094
D-3	5,739	32,961
D-4	2,350	2,414
D-5	39,000	47,904
D-6	125,804	139,899
D-7	---	3,985
	$368,478	$436,490

Expenditures from the Fire Fund (Cont.)

	July 1 to August 31, 1921.	January 1 to August 31, 1921.
D-1	$250,000	$255,125
D-2	4,177	8,186
D-3	4,147	35,842
D-4	10,300	10,322
D-5	65,000	72,621
D-6	34,628	35,569
D-7	2	12,249
D-8	---	76
	$368,254	$429,990

FOREST PRODUCTS LABORATORY

Wire-Bound Box Manufacturers Study at the Laboratory: The first two courses in wire-bound box manufacture given at the laboratory were attended by a total of 25 men from the 4-One Box Makers' Association. These five-day courses were especially planned for the association to consider the efficiency of wire bindings.

In the demonstration tests on shipping boxes it was shown how the thicknesses of the boards may be reduced and the box made stronger by wrapping it with metal bands or wires. The Laboratory has found that by this method the ability of the average wooden box to withstand the shocks of transportation may be increased several hundred per cent at small expense. It is interesting to note also that the metal-bound box has been particularly recommended by the American Railway Association to overcome the great annual losses due to pilfering.

Cut your Timber in the Dark of the Moon: Pathology and Timber Physics need no longer concern themselves with blue stain if we can use the suggestion of a resident of Mexico.

We have always heard that potatoes must be planted at the "right time" of the moon, but apparently our correspondent has sprung something new when he says that down in Mexico, "Timber 'cut right' throughout the tropics is cut after the moon passes 'Full' and from then on until 'New Moon' or in the dark of the moon. Am convinced that this holds good anywhere, just as surely as that tides run through winter as well as summer. . . .

"Have seen a mine using a certain class of timber have to retimber the entire mine every 6 months, while using timber cut wrong, at the same time in clearing old workings they were taking out exactly the same kind of timber that had been in muck and water over 40 years, that was perfectly sound and without a wormhole in it. Have seen jobs known to have been placed over 120 years previous without a borer or teredo in them."

RANGER BILL SAYS:

Daddy, have you come home to live? said one of the children after my last field trip.

That Houdini chap who can keep afloat with his hands and feet tied must of trained on a National Forest.

A little money for fire publicity might save buyin' a lot of long-handled shovels.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Weather Made to Order: In response to District 3's "Help Wanted" in the Service Bulletin of July 24 - there is a lady in Boulder, Colo., who states she has invented an ether chronometer which controls the elements. She claims to have made hundreds of rains and snowstorms, and could within a brief period cover the mountains with snow and make rains to remove the dryness of pine and spruce needles. She says she makes rain and showers in Boulder whenever there is complaint of dryness and makes afternoons cool and delightful - when she has time to devote to the work. All she asks is transportation expenses and a reasonable amount for her time. Her address will be gladly furnished to anyone interested.

Minor Road Projects Nearing Completion: The Bennett Creek minor road project on the Colorado and the Squirrel Creek minor project on the San Isabel Forest are nearing completion and considerable interest is being taken in both of these roads by the local people at Ft. Collins, Loveland and Pueblo. It is very probable that these communities will stage a formal opening as soon as the construction work is completely finished.

Influence of Forest in Conserving Water: Mr. Henry E. Hardtner of Urania, La., better known as "Uncle Henry," vouches for the following incident:

When the town of Urania was established, water was secured from an excellent spring which supplied not only the mill but the town as well. In 1900 the watershed from which the spring water came was completely cut over. In those days, Mr. Hardtner said, no attention was paid to leaving seed trees or in saving reproduction and a complete denudation resulted. Shortly after this occurred, the spring went dry and very little or no water came from it until 1915, when it started to flow once more and since then has flowed continuously. When the spring once more started to flow the reproduction on the area, which had come through in spite of the denudation, had attained a size of from 10 to 15 feet and Mr. Hardtner stated that he is satisfied that the water started to flow once more because it was conserved by the seedlings which had then reached a size sufficient to prevent the drying out of the soil.

DISTRICT 3 - SOUTHWESTERN DISTRICT

He'll Shoot for New Mexico: Supervisor Andrews of the Santa Fe has been granted leave during September in order to attend the National Rifle Matches and small arms Firing School at Camp Perry, Ohio. Mr. Andrews will act as coach of the New Mexico National Guard Rifle Team.

Young Lions on Display: Albert Pickens, the U. S. Biological Survey trapper, caught a couple of good sized mountain lion kittens and shipped them to Albuquerque this week. They arrived and were exhibited in the window of an Albuquerque hardware company. With them was shown a tiny kitten of the wild cat family that frolicked all about and furnished most of the fun for the dozens of people that crowded about the window. "O, see those lion cubs," cried a lady of ample dimensions. "They ain't cubs," informed her man companion, "they're - they're pups, I guess."

District Forester Pooler Goes to Uinta and Manti Forests: District Forester Pooler from Albuquerque, New Mexico, left for the Uinta and Manti Forests, where he will spend a very short time in the field, and attend a meeting of grazing studies men at the Great Basin Experiment Station.

Mr. Pooler has spent several days in the District Office discussing job sheets, plans, standards and objectives with Operation and the District Forester. He has made the rounds of several of the other Districts and is correlating the idea of these points.

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One Aspect of Forestry

Mrs. Ranger: "Why, Bobby, you selfish little boy. Why didn't you give your sister a piece of your apple?"

Bobby: "I gave her the seeds. She can plant 'em and have a whole orchard."

Paper: 90% of all the paper manufactured in the United States is made from wood. 85% of the total paper production for 1918 was made from the following four species: Spruce 55%, hemlock 16%, balsam 7%, and poplar 6%.

Eaves Troughs for Mountains: For the control of run-off or flood waters from the slopes of watersheds and to conserve these waters for use in irrigation and supplying the needs of the city of Santa Fe, an engineer proposes a line of ditches along the bases of the mountains like the troughs on the eaves of a house and storage reservoirs in canyons into which the ditches would empty as the down spouts pour into cisterns. He claims that a hundred thousand acres of now unproductive land can be reclaimed at moderate cost.

Almost a Barage: Sixty-seven strokes of lightning were counted within the Cave Creek basin on the Coronado, an area only about half a township in extent, during one day, July 20. Nine trees within twenty feet of the Snowshed Trail were struck. One large Douglas fir, that sustained the heaviest damage, showed that it had been hit approximately two years ago. Four small fires were set but heavy rain prevented them from getting larger than Class A.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

"Hidden Treasures": An article about the "Tree of the Scythes" reminds me of a peculiar thing that I ran across while working with black walnut in the Middle West during the war. The sawmills in that region get a good many "fence corner" trees which have stood in yards and on farms. A veneer cutter at one of the mills told me that he remembered having seen four or five sickles cut out of walnut logs during the years of his experience. The crotch of a walnut tree growing in the front yard apparently is the very spot you would hang a scythe and then by chance it is left there until the wood has grown up so that it can not be taken out. A vast quantity of other interesting things are also found, such as nails, bolts, staples, hinges, hors shoes, etc. This particular veneer cutter has a tobacco box laid away in which he preserves interesting things which he found inside of walnut trees. I remember that his collection included several empty brass cartridge shells, a pipe considerably the worse for wear, the stem of another pipe, and severa teeth apparently from sheep.--F.S.B.

Dr. Waugh Leaves for Amherst: Dr. F. A. Waugh, Forest Service collaborator, spent yesterday in the District Office discussing recreational plans with Mr. Rutledge and Mr. Gery. He left last night for Amherst, Massachusetts.

Mining Claims Examined: Mr. French returned late last night with Mineral Examiner J. C. Brown from the U-Bet Your Boots, Golden Arrow, and Joy mining claims in the American Fork Canyon, Wasatch National Forest.

These claims, or at least portions of them, are in conflict with the Timpanogas Cave, the wonders of which are known to numerous of the District Office hikers. The mining claims have been located several times and abandoned, over a period of years. With the discovery of the cave last August by Forest officers (it is understood its existence was previously known by a miner who kept his own counsel) the erstwhile claimants to the above-mentioned fantastically named mines pricked up their ears, and now they are digging holes with great diligence, with a view after patent, it is surmised, of owning a natural cave through which as many as 400 people pass in a single day. The financial possibilities of such a venture rival most mines.

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Cooperation.

"This is the law of the jungle
As old and as true as the sky,
And the wolf that shall keep it may prosper,
But the wolf that shall break it must die,
As the creeper encircles the tree trunk,
So the law runneth forward and back,
For the strength of the pack is the wolf
And the strength of the wolf is the pack."

--Kipling.

DISTRICT 5 - CALIFORNIA DISTRICT

Staying With It: (From a 618-b report by District Ranger Slater of the Lassen). "Traced parties having passed up and down the road at the time this fire was supposed to have been left. Found a man who said his wife ought to know the license number of the car. Got the number from this man's wife, checked this number with the State Motor Vehicle Department's registration; found the car was registered to a man in Oroville. Went to Oroville, found out that this man had traded this car in a Chico garage. Came back to Chico. Went through this garage's records, got the name and address of the man they sold it to. Went to this address and he had moved, they did not know where. Traced parties through the doctor they had had in sickness. Found my man and he decided to plead guilty."

The Sierra's Oldest Lookout: Lumber for the Shuteye Lookout Tower is already bought, and a part of it, together with the window frames, is at the end of the road. Before the winter storms begin there will be a new tower built. Shuteye being the oldest lookout on the Sierra - perhaps on any Forest - having been established in 1908, it is high time a modern tower was built. Indeed, the mountain was used as a lookout in 1907, during which summer A. K. Wofford and Walter Welty camped at Billy Brown Meadow and climbed the peak alternate days to look for fires. To be sure there were no telephones, and if one of them saw a fire, he went to it; if it looked very large, he ran down hill and rode for help. But in 1908 the first cabin was built on the mountain.

Sequoia: Guard Willa; stationed at Frog Meadow, while occupied in dusting off the Summit trail in the vicinity of his station, had a sudden presentiment that something was watching him work. Upon turning around to have a look, the rapidly growing form of a mountain lion hove in sight. Willa had neither a "good book" or gun, and it is fair enough to assume that his diary will read of the incident: "After chasing the lion over the hill I immediately returned to my station."

DISTRICT 6 - NORTH PACIFIC DISTRICT

What's in a Name? The Umatilla is tellin' it to 'em straight on the matter of defacing forest signboards. Supervisor Kuhns sent out a clear and unmistakably plain letter of July 15 to some six none-too-modest persons of Pendleton and Stanfield, who evidently wanted to make their names famous. The Supervisor told them what was liable to happen to them, and he helped the famous name idea along by sending a news item to the press, calling attention to the act being a violation of a federal regulation, and wound the article up by giving the names and addresses of all the parties whose names were found on the signboard. The Pendleton correspondent of the Portland Oregonian sent the article complete to the Oregonian and it appeared in the Sunday issue of August 6. The perpetrators may not relish seeing their names broadcasted as violators of a federal law - other possible violators may take warning from this. The press is clearly with the Forest Service in trying to stop this plain vandalism. The fullest publicity may be the only means of stopping it.

I. W. W. The man who was responsible for the Hermann Creek fire was later found to be an unnaturalized Austrian; moreover, a large amount of I.W.W. literature was found in his cabin. He was given 90 days in jail. Somebody said he ought to have been made to fight forest fires for 90 days instead.

"Let 'Er Buck!" The Umatilla Forest has at times a ray of reflected glory from its headquarters; in fact, each September when the Pendleton "Round-Up" is held. The Round-Up is becoming famous, to wit, this year among others who will be present are the following writers: Wallace Irwin; Heywood Broun, of "Vanity Fair"; Geo. S. Chappell, author of "The Cruise of the Kawa"; George Palmer Putnam, of the publishing firm and author of "In the Oregon Country"; Ruth Hale, journalist; Chas. Hanson Towne; Frederick O'Brien, of "White Shadows of the South Seas" fame; Ralph Barton, illustrator; Walter Trumbull, of the N. Y. Herald; and Col. Charles Wellington Furlong, world-traveler and author.

Service Bulletin
U.S. FOREST SERVICE
(Contents Confidential)

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A BEAR STORY

By J. N. Langworthy, D-2

Once upon a time there were three little bears that lived with their mother (who was also a bear) at Tower Falls. Tower Falls is not a town. It is a beautiful place for bears where a fine stream of water plunges over a cliff. On top of the cliff is a tall column of rock which resembles a tower.

A public camp ground is located near the Falls and a store, where travelers may purchase various things at prohibitive prices.

Sometimes the storekeeper has bread too old even to offer the tourists and he is obliged to consign it to the refuse pit. Sometimes salt meat and other supplies are thrown away.

The three little bears and their mother are not so exacting in their tastes as the tourists and appreciate to the fullest these contributions to the garbage pile.

One evening last August an automobile containing two men and a boy glided down the road and stopped at the Tower Falls camp. The three little bears and their mother had just made a call at the rear of the store, where the mother had appropriated a loaf of bread, and were on their way home when they sighted the car and the occupants of the car sighted them. The boy immediately started over to introduce himself, but the bears having an inborn distrust of boys beat a hasty retreat.

Other cars stopped that night at Tower Falls, and after supper the campers discussed bears around their fires. It was decided finally that the bears would not be apt to visit camp that night. I do not know what line of reasoning led up to this decision, but what happened that night proved the fallacy of the argument.

The two men and the boy hung a very fine ham in a tree near their tepee. Their other provisions were placed in boxes near the entrance. The other campers doubtless took similar precautions before rolling in their blankets.

Quiet soon reigned at Tower Falls. A big moon rose and illuminated the camp and the mother bear and the three little bears stole silently to the edge of the dark forest and reconnoitered. The nearest tent was the tepee of the two men and the boy, and this was selected as the objective of the first drive.

Old mother bear detailed two of the little bears to look after the front of the tent, while she took the other cub for an investigation of the garbage pit.

Everything went well until one of the little bears, in an endeavor to pull a loaf of bread out of a box, bumped against the head of one of the men who awakened to see one little bear with a loaf of bread, the other with a package of sugar in his paws.

In the melee which followed, one of the little bears escaped with the sugar, whereupon his partner in crime demanded his share. A lively battle ensued, during which the sugar disappeared entirely, to the great amusement of the boy.

Old mother bear, thinking it time to show her authority, cuffed one cub soundly, causing him to take refuge in a tree.

Evidently satisfied with duty well done, old mother bear sat down on the edge of the tepee and unintentionally, I am sure, on one of the men who still slumbered blissfully.

It is not good form to disclose the identity of the characters in a story, so all I will tell you is that Mrs. Bear sat upon a Chief of Grazing of the Forest Service.

Now the Chief of Grazing has been in the Forest Service many years and no doubt was used to being "sat upon" in the early days before he reached the D. O., but it is very evident from the way he came out of the tepee that he is no longer accustomed to such treatment.

Mrs. Bear, upon realizing her mistake, withdrew her forces in a very dignified manner, and put in the balance of the night breaking into a box of bacon which a freighter had left in a nearby tent.

In the dust of the trail next morning, side by side, the bear foot track of a little bear and the bare foot track of a little boy proved that we had not dreamed and that a member of the District Office had been "sat upon."

FIRE STUDY ON IDAHO DUFF

By Erich F. Stuewe, Madison Lab.

Fundamental study in fire protection is being made at the Forest Products Laboratory by the development of curves and tables showing the moisture content of 11 samples of north Idaho duff when in equilibrium with various temperatures and humidities. The work is being done in cooperation with the Priest River Experiment Station, Missoula, Montana, which sent in the samples.

Work done last year by J. A. Larsen of that station established the fact that duff with 8 to 10 per cent moisture content is in a state of inflammability. Duff under 10 per cent moisture content could, in absence of wind, be ignited by a match, and when over 10 per cent, no match could light it. Study showed that the moisture content of the finest structural material would fluctuate most. The study will reveal figures which can be used in recognizing weather approach to hazardous fire conditions.

The index of inflammability is obtained from the relative humidity and temperature readings. The specific curves and tables desired by the station are for moisture contents when in equilibrium with temperature and humi ity for temperatures varying from 40 to 100 degrees F., and relative humidity at 2 to 70 per cent. The equipment at the Laboratory permits control of factors involved in the study and complete data will be obtained in from three to four weeks.

The 11 duff samples are from: a stand of immature white pine and larch fir; twigs from white pine type; wood - outside half-inch from top shady side of down log, white pine type; wood - outside half-inch from top sunny side down log, white pine type; duff from mature white pine; duff from yellow pine. All of the duff is from northern Idaho, and has the accompanying cover of loose needles. The shipment was so handled that its hygroscopicity was not destroyed.

THE NAVY PRACTICING FORESTRY

By W. R. Mattoon, Washington

The Commanding Officer of the U. S. Marine Reservation at Quantico, Va., General S. D. Butler, is a good forester. He is working a big force of marines in getting cut a huge pile of fuelwood for the barracks, where more than 3,000 marines must be fed and kept warm this winter. With 10-ton tractors he is at the same time logging huge yellow poplars, chestnuts and oaks from deep ravines where the loggers of olden days hadn't a ghost of a show.

The thing that interests foresters most is the keen desire of General Butler to give the forests a fair show and the consistent way he is going about it.

There are some 5,000 acres of timberland on the Reservation. This i mostly covered with a rapid growing forest of 20 to 50-year-old oaks, hickories, poplar, chestnut, black and sweet gum. For many years under former private management, the forest was culled for crossties and sawlogs. Growt is rapid.

Ahead of the cutting crew, a small crew of 2 to 4 men with buckets of white paint, under the direction of an officer, spots the diseased, defective, crooked, and forked trees, and those of the less valuable species. The cutting crew follows and works up the marked living trees and all dead standing and down timber. Small, portable, buzz-saw outfits follow the cutting, and the stove-length wood is hauled out to the main roads by tractors and thence by trucks to the barracks. In this way the forest is getting an almost ideal clean-up and the Government making very good on its investment in culled forest with large fine "inaccessible" timber thrown in as velvet.

The operation is being conducted with the aid of suggestions offered by the Forest Service. During the past three years the writer has visited the Reservation several times and drawn up the recommendations. The spirit at the Reservation is indicated by the remark in 1919 of Col. H. L. Roosevelt (cousin of Ex-president Roosevelt), then Chief Quartermaster, that "if a living tree was unnecessarily cut, the perpetrator would be 'shot in his tracks.'"

MARKET VALUE OF EXPERIENCE IN GOVERNMENT OFFICES

Those who are interested in the scanty literature on the subject of administration will find some good pages in "The Federal Service," by Lewis Mayers, published by the Institute for Government Research. The book can not be bought but probably can be secured from libraries.

The following is a suggestive paragraph from the author's discussion of opportunities for those who wish to leave the Government Service.--R.H.

"At the present time experience in the government service in a capacity akin to that known in private employment as "office manager" has virtually no market value in the business world. Yet the work involved - the supervision of a clerical force engaged in correspondence, filing, bookkeeping, mailing, and the like - is essentially the same in many government offices as in commercial offices. The difficulty is that there has not been developed by those branches of the service engaged in office work a reputation for efficiency. In point of fact, many government offices are perhaps more efficiently conducted than many commercial offices. But just as the office management of a large corporation is credited with high efficiency in the absence of any knowledge of the actual facts, so the government office now bears the stigma of inefficiency. What is chiefly needed, therefore, to give experience in the federal service a market value is the development of a reputation for efficiency."

WHAT'S THE CHANCE?

By H. V. Beeks, Inyo

This will not interest any maiden lady or bachelor gentleman with lodgings in an eight-floor apartment house or rooming with a refined family in a big city. But there is something in it for the Service man and his family in the mountains and small towns.

Every now and then, seemingly by accident, we hear of a new regulation or fiscal interpretation by the Comptroller that results in better conditions for individuals, hence also for the Service, we hope. For example, the 15¢ auto mileage for hauling. Then there was something recent to the effect that a Forest Clerk could have his telephone bills paid for by the Government when used on official business.

Some of the Indian Service people are furnished free houses; lights and fuel also to some extent, I understand. And what else? Perhaps the Budget Bureau is making as one of its duties the correlation and rounding up of What-all-do-they-have-and-enjoy-in-some-Departments-and-not-in-others.

And if not, why not? To come to the point, why can not the Real Estate Board, or the Housing Corporation (if still existing) function in the direction of the Forest Service in the small towns and mountain hamlets? In many small towns where there are National Forest headquarters and Ranger Stations, it is equivalent to the impossible to rent a house - be it for Supervisor, Ranger, Deputy or Clerk, or anyone else - unless one moves into a shack that is always for rent because no one will live in it, or unless one pays out about forty per cent of his salary. And even that kind is often not to be had. When you do land a house, it is not what you want, and still less what your wife wants. So you live along in this unhomelike place, until in desperation you manage to buy or build a house of your own.

After living a short time in this homelike place you are transferred. Some Rangers have houses, some better than others, furnished by the Government. Likewise some Supervisors, clerks, etc., have free houses. A Forest officer in a small town is often just as hard put to it to find a house as is the Forest officer up at a mountain hamlet in his free house.

Now we do not even ask for a free house. But let a special Real Estate Board of the Government build some decent modern cottages for Government officials such as the Forest Service in small towns, and charge a rental which need not be large to return the investment with interest. If such a housing bureau would like to know of a good place to start in, have them write us.

WASHINGTON NOTES

Assistant Forester Will Barnes has returned from his inspection of the western Forests. He brings with him a coat of tan and a new stock of rattlesnake stories. It is understood that Mr. Barnes' trip was blighted by meeting an old-time ranger in California who had never heard of him. Sic transit gloria mundi!

Forest Economist Raphael Zon on his return from New England reports few signs of forest devastation but widespread forest deterioration. Spruce, on which the pulp industries of the East are dependent, is giving way to the more aggressive hardwoods and to the ravages of the bud worm. There is no scarcity of second grade hardwoods, but spruce, on all but the True Spruce types, is not reproducing.

Doctor Per Axel Rydberg, Curator of the New York Botanical Garden, is getting out a supplement to his Flora of the Rocky Mountains. In a recent conversation with a member of the office of Grazing, Dr. Rydberg stated that the Forest Service is his best customer for this book. He also stated that he had got from the Forest Service more additions to his Flora and more constructive criticisms and suggestions than from any other source, - in fact, about as much as from all his other correspondents put together.--W.A.D.

The Fag End. "There aint going to be no more Bulletin" if Service officers don't perk up and send in some articles. The Editor is having hard sledding to get enough copy from week to week to put out the usual edition.

FOREST PRODUCTS LABORATORY

A Free Service to Mills: Through its study of the manufacture and use of small dimension stock, the Laboratory is in receipt of numerous inquiries from consumers who desire to locate dependable firms from which they can obtain ready-cut small dimension stock meeting their requirements. Since one of the primary objects of the Laboratory's investigations of this problem is forest conservation, it desires to be in a position to furnish its inquirers with information concerning the kinds, quantities, and qualities of small ready-cut stock produced at different mills.

There has been more or less dissatisfaction in the past in connection with the marketing and use of small stock. This in the majority of cases has been due to avoidable causes, and recurrence of such a situation is unnecessary if due precaution is used. For these reasons the Laboratory, while acting as an impartial medium, can only include in the list firms which will vouch for the acceptable quality of their small dimension products

Knowledge Efficiently Applied Brings Immediate Results: Not always can one enjoy such immediate satisfaction and reward for expert knowledge as resulted recently when $407.41 was saved for the Government on a bill sent to the Laboratory by a lumber company which had furnished lumber below grade.

The shipment was billed as 15,374 feet of No. 1 common at $72 a M., amounting to $1,106.93. In unloading the shipment, it was suspected by Mr. Wooster that a lower grade had been sent, and after an inspection by Messrs. White and Ivory, a very large percentage was found to be below grade.

Later a representative of the company regraded the lumber and classified the shipment as 70 per cent No. 2 common at $50 per M., and the remainder as No. 3 common at $35 per M.

This incident well illustrates the value of the standardization study and is an indirect result of a trip made by Messrs. White and Ivory to the northern white pine region for the purpose of obtaining first hand information on the practical operation of the grading rules of the Northern Pine Association.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Local Game and Fish Organizations: Various communities in the State of Colorado are forming local game and fish protective associations as a means of cultivating interest in local game and fish resources as well as for the purpose of concentrating to the best advantage on important improvement and development projects. The most attention is given to the fishing resources and the nurse pond idea. In some localities the game refuge question is receiving a good deal of attention. Among recent organizations perfected are one in Colorado Springs and one at Monte Vista, the latter including memberships from seven different towns of the San Luis Valley; thus this particular organization is a valley-wide proposition.

F. S. Tree Planting Tool Approved by Commercial Firm: Last year the Supervisor of the Minnesota Forest had a number of planting bars or spades, such as have been in use on that Forest for a number of years, made up by the Marshall-Wells Hardware Company at Duluth. This company decided that the spade was worth carrying in stock and are now manufacturing it and offering it to the trade. In their circular describing the same, the following is quoted:

> "A spade especially designed for use in planting trees and shrubbery. Its unique wedge shaped blade, with sharpened edges, makes it particularly adaptable for digging into the hardened surface dirt or loosening the sub-surface, preparatory to planting. The Zenith tree-planting spade was created and approved by the Minnesota National Forest Service, and is used as part of its standard equipment."

DISTRICT 3 - SOUTHWESTERN DISTRICT

1922 Delinquent Grazing Fee Situation: Of the 567 delinquent grazing permittees on August 1, plus 23 new ones received during the month of August, making a total of 590 delinquents for the first half of the fees, we have received 147 payments. We still have on September 1st 443 grazing delinquents for the grazing season of 1922 and 183 delinquents for the grazing season of 1921.

A Ford and a Wire,

And, Presto, a Fire: Forest Officer found himself without a match with which to start his camp fire for breakfast, but Forest men have pulled themselves out of worse situations than that. This one disconnected the cable from one of the spark plugs and hitched to its end a piece of wire long enough to reach the place he had cleared for the fire. A second wire was grounded on the frame and also led out to the fireplace. He saturated a little piece of waste with gasoline and put it among the kindling. Cranking up the Ford - the old-fashioned kind - the two ends of wire were brought close together just above the waste. A few revolutions of the motor and there he was with a happy blaze. If hay wire is used, persons not needing electrical treatment will handle the wire in split ends of little sticks.

Springs on Strike: McCain and Miller of Albuquerque, who have just completed the spring development, fire places and toilets in Tejano Canyon, tell of a phenomenon observed on August 24. The spring they were curbing ceased flowing at about 10 a. m., and resumed in about an hour. They learned later that another spring in the vicinity had done the same thing at about the same time! Question: Was it a seismic disturbance or was the one spring protesting against being curbed and the other on sympathetic strike?--Manzano.

Getting Action: During a recent electrical storm two trees in the camp of the Apache Lumber Company at Cooley, Arizona, were struck by lightning. One exceptionally tall tree was hit in the topmost branch and streaked clear to the bottom. Scalers Merkle and Arnold happened to be eye-witnesses to this and saw the lightning strike. A chipmunk was noticed about halfway down the tree two feet in advance of the lightning streak and he held his lead all the way to the ground squeaking "split-it, split-it."

RANGER BILL SAYS:

There has never been a forester in the White House, but the Governor's mansion in Pennsylvania ain't far off.

I know a lot of fellers that could easy make 100 per cent on a course in killin' time.

I hear tell the Fiscal Regulations are gettin' to be mighty popular readin'.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Kiwanis Club Members Visit District Office: Numerous committees from the Kiwanis Club have called at the District Forester's office to discuss road projects. They all expressed great interest in the question of sanitation on the Forests, and also expressed their intention of supporting an appropriation by Congress for improving recreation areas.

Baker Returns from Richfield: Mr. F. S. Baker returned to-day from a trip to Richfield, where he attended the convention of the Utah State Press Association. This convention afforded an excellent opportunity of learning how newspaper editors from all over the State look at material which might be classed as propaganda, and they are unanimous in condemning "canned news" which is sent out from some central agencies and which has little local interest. On the other hand, they are more than anxious to get material perhaps of the very same class which has been given a local twist in some way. They are of the opinion that in general the news which the Rangers and Forest Supervisors give them of happenings on the ground and items which have a local flavor are very much better for their use than generalized news items sent out from Ogden or any other centralized point. The field force is absolutely the backbone of this sort of PR work. Everybody should make it a point to keep up their activities along this line.

To Be Taxed or Not: The holder of a summer home site permit recently complained that the State tax assessor ~~held~~/that the summer cabin built upon the Forest under the special use permit was subject to be taxed by the State. While lands or other property of the United States are not taxable by the States, improvements constructed thereon by permittees, users, or others and remaining the property of such persons are taxable the same as other privately owned property.

DISTRICT 5 - CALIFORNIA DISTRICT

Does It Fool 'Em? Part of our forest fire exhibit for this year consists of some burning logs in which the playing flames are simulated by flame-shaped tongues of red, orange and blue silk lighted by a hidden electric bulb and made to flutter by an electric fan beneath.

During the State Fair two of the Fair Association directors stopped in front of the exhibit and, after some earnest conversation, passed on. In a short time one of the gentlemen came back and approached George Miller, who was in charge, with the remark that he had something interesting to tell him, namely, that his brother director had roundly denounced the management for permitting an exhibit of this character because of the danger from the fire.

Too Much Preparedness: After a recent newspaper publication of our campaign against advertising signs in the Forest, Ranger Jeken was approached by a real estate man in San Bernardino, who commended us highly upon the step we had taken, and upon being asked why he felt that way he stated it had been his experience that every time he came to an especially dangerous place on a mountain road, he invariably found that some one had painted a sign reading "Prepare to meet thy God," and that it made him nervous.

Fire Situation Serious: On September 17 we were faced with the most serious fire condition that has been experienced in the District this year. The Santa Barbara reported a big fire in the western portion of the Forest, the Sierra reported one with an eight-mile front nearing the Forest boundary from the brush-covered foothills to the west, and the big fire on the California Forest was still out of control. Most of the members of the District Office were absent on the California fire and indications were that outside help might be necessary on at least one of the other big fires.

It's a Gay Life on the Inyo: Porcupines are reported so thick on the Inyo Forest that neither Rangers nor campers are safe. The other night Ranger Guy Way, who lives at Mammoth Station, heard something "eating on" his house, and grabbing his trusty gun went forth to investigate. As he rounded the corner of the house he almost fell over a big porcupine, which he proceeded to finish off with one shot. While viewing the corpse Way saw a hole leading under the house and was about to investigate when out walked another porcupine, which soon followed the first one to the "happy hunting ground."

Next day Mrs. Way was recounting to the wife of a nearby camper the fact that porcupines had nearly eaten a hole into the station. "That's nothing," said Mrs. Camper. "The other night my husband woke me up and said something had just kissed him and wanted to know if it was me. Well, we got to looking around and saw a big porcupine just walking out of camp."--L.A.B.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Seasoning: A working plan has been prepared by C. W. Zimmerman of the Seattle Branch Laboratory entitled, "The Effect of Subsequent Seasoning on the Strength of Perforated Treated Douglas Fir Ties." The work is being done in cooperation with the American Wood Preservers' Association at the request of this association and the American Railway Engineering Association. The purpose of the tests is mainly to secure data on the recovery in strength in green perforated creosoted Douglas fir ties after being allowed to season after treatment. In connection with these tests data will also be secured showing the recovery in strength in green perforated seasoned material creosoted and again seasoned. These tests will be made in compression perpendicular to grain.

Invited: The Forest Service has been asked to put on an exhibit at the Oregon Health Exposition to be held in the auditorium in Portland from October 26 to November 4. Among the backers of the exposition are the Oregon State Health Bureau, University of Oregon Medical School, Oregon Agricultural College, Public Nursing Association, The Four L, and others.

The Silent Drama: The Irvin Cobb Oregon-made out-of-door picture, "Hunting the Big Silence," which depicts the large humorist's outing on the east slope of the Cascade Mountains, will soon be released.

The picture shows in all its magnificence the grand scenery of the central part of the State all the way from the Columbia River to Medford. Crater Lake comes in for one whole reel out of the five, and two sections of footage are devoted to Mount Hood.

This is the movie taken in 1920 when former Supervisor Jacobson accompanied Cobb over the Deschutes and neighboring country.

COLORADO FIRE TOOL PILFERERS APPREHENDED

Within a week two pilferers of fire tool caches have been rounded up on far distant points in the District. Ranger Stavely of the Cochetopa brought in a young cow puncher who was just about to start overland for New Mexico with a water bag and canteen taken from the fire tool box in his slicker. Arrangements were made immediately for a hearing before the U. S. Commissioner at Gunnison. Assistant Solicitor Ise, who went to Gunnison for the hearing, after conferring with the boy's lawyer, concluded it would be preferable to handle the case in the local courts rather than to hold the culprit for the Federal Grand Jury with the resultant expense and the possibility that the boy would have to languish in jail in the meantime. Furthermore, it seemed doubtful that indictment could be secured in view of the small value of the property stolen. The boy was therefore taken back to Saguache, where he pleaded guilty before the County Judge and was sentenced to two years in the State Reformatory, this sentence being suspended on condition that he make report each month to the judge.

On the Shoshone, Ranger Thomas brought in an old trapper who was preparing to drift with an assortment of Forest Service tools in his wagon. A tool cache had been rifled several months ago and the Ranger suspected the oldtimer and was laying for him when he packed up to pull out of the country. His wagon was stopped on the road, and search revealed a shovel, saw, and other tools on which an attempt had been made to erase the mark. The U. S. Commissioner put him in the county jail in default of bond to await the next Federal Grand Jury.

FOR EXCHANGE

District 8 is willing to exchange the sprinkler used by Jupiter Pluvius in this section of the country (which leaks like a sieve, anyway) for the one in need of repair on District 3, as noted in the Service Bulletin of July 24, 1922. Request for routing of above sprinkler should be made to the Federal Traffic Board as per Bulletin No. 7G of March 23, 1922. --H.S.

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U. S. FOREST SERVICE
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DO YOU GET A "KICK" FROM YOUR JOB?

By J. A. Larsen, Priest River Exp. Station

The questions I am going to ponder are these: Do the members of the Forest Service in office and field become mechanical automatons? Do they look upon their jobs merely as jobs, watching the clock and the pay envelope? etc., etc., etc. Are there not in any line of work - any organization - two distinct types of mentalities, the one, the minority, made up of individuals who find inspiration, yes, even recreation, in their work? namely those who have reached the stage of original thinking, the leaders and creators. We recognize them and allow them no cull for dry rot or other defect. And in addition to these, are there not the mass of toilers? The latter perform menial, mechanical and clerical work in many cases. As to the latter class, their star has not risen either by fault of superiors, their own selves or the job. There are, of course, many ways of killing a man or woman in any organization, viz., lack of appreciation, sheer neglect, too rapid advancement, assignment to the wrong task, etc. A great many are not originally so constituted that they can lead or originate. Then again, the job itself often grinds men and women down; jobs which are kept by grim necessity; jobs which do not and can not show results to be proud of. You, Forest Ranger, who do anything from painting a house to laying out a road, compare your job with the one of screwing grease plugs on Ford cars for four years! No, you have a chance to show up your work, something which will proclaim your ability, originality and enthusiasm. What will one hundred thousand grease plugs show?

No wonder men and women flock to the movies, read fiction, worthless and otherwise. They get no mental "kick" from their occupation. In the olden days it was different; each craftsman had reason to be proud of the product of his own brains and hands. This chance to show results is still largely true within the Forest Service, but to what extent depends, of course, upon the superior, the individual, and the job.

CAMP GROUND DEVELOPMENT IN D-5

By L. A. Barrett, D-5

In compliance with the Forester's request for camp ground improvement estimates, we have just compiled some figures that may be of interest to other Districts as showing what may be done through cooperation. Our figures cover 67 camps that have been improved or partly improved to date, and cooperation was secured in the development of 37 out of these 67 camps.

The total cost of improvements to date is approximately $60,500, of which $38,175 was cash or its equivalent in labor and materials furnished by our cooperators. Fully half of the $22,325 spent by the Forest Service was contributed time of Rangers, Guards and other Forest officers. The above cost does not cover any road or trail work, but does include clearing land, construction of latrines, garbage pits, incinerators, fireplaces, tables and benches, water development and a few other items like bath houses, boat landings, fencing some camps, etc. These 67 camps now have 188 latrines, 153 garbage pits, 198 fireplaces, 652 tables, 75 incinerators and 35 water developments.

CAMP GROUND DEVELOPMENT IN D-5 (Cont.)

Our principal cooperators are automobile clubs, motor car dealers, counties and a few wealthy public-spirited individuals. Cooperators have "chipped in" anywhere from $1.00 to $5,000 to help develop these 67 camps that, at a conservative estimate, were used by over 200,000 people the past season. Some of these cooperators are regular annual contributors. This is particularly true of one automobile club and several counties.

Practically all District 5 camp ground improvements are made in accordance with standard plans, even standard camp ground signs being used wherever possible.

Now this is the bright side of our case. The dark side is the fact that many of these 67 camps need more improvements and there are about 300 more popular camping places in this District that from the sanitary standpoint alone badly need development. While we expect to secure cooperation in developing many of them, the process will be slow unless the Forest Service is furnished with more funds that can be used as "bait." For, the same as with fishing, we find it easier to secure cooperation when the right kind of bait is used.

SHELL MOUNDS ON THE FLORIDA

By Lenthall Wyman, Southern Exp. Station

Recently New Orleans staged a crawfish eating contest and a certain resident of the "vieux carré" came through with flying colors and took the prize. It is confidently believed that this rapid fire shellfish meal hound must have been a direct descendant of some of the old Indian tribes that flourished and waxed fat on the shores of Choctawhatchee Bay and Santa Rosa Sound in Florida long before the Spanish explorer, Panfilo de Navarez, stretched his legs in the sands in 1528.

In those days men were men and how they did eat. They must have been the champion shellfish eaters of the world to judge from the mounds of shells they left. To-day when the tourists and vacationists visit the shores of Santa Rosa Sound close by the Florida National Forest they see large mounds similar to the Indian mounds of other regions of the country, but here on the Florida they are built of oyster, clam and mussel shells - worlds of them. A hundred feet long, five feet high and twenty feet wide would be the dimensions of a typical one, and there are mounds and mounds - all along the shore. Mingled with the shells are broken pieces of pottery - clay cooking pots with designs engraved or picked on them, mostly geometric figures, and each one distinctive. To-day these shell mounds are covered with soil, sand, and vegetation, but the nearby residents have dug into them for road building material and the rains have disclosed the bits of pottery.

To cap them all is a larger mound which has been exploited by some ethnological society. Many rare specimens of pottery as well as other relics were removed at that time, but occasionally now a whole pot or jug is discovered to excite the interest of the summer visitors.

A STUDY IN METHODS OF SLASH DISPOSAL

By W. C. Lowdermilk, D-1

Recently a study of comparative methods of disposing of logging slash was made by Logging Engineer J. W. Girard and the writer. It was located on the Canyon Creek watershed on the Kootenai National Forest in a western yellow pine stand.

The purpose of the study was to determine; (1) the most economical and practicable method of disposing of logging slash, and (2) to what extent the disposal of slash is necessary to render a cut-over tract safe in the terms of fire protection. Safety in this sense is understood to mean the possibility of effective fire suppression in the fire season. The second objective was not carried out in this part of the study.

The slash was disposed of on two 20-acre measured plots. Stump scales were made to determine the volume of timber cut against which the costs were chargeable. The percentage of defect on this sale area is not exceeding 5 per cent. The crew consisted of 5 to 6 men with a foreman and worked 8 hours on the job.

On Plot A the slash was burned as it was piled. Fires were started and the slash was thrown on. Four-tined pitchforks were used to throw on loose needles. A clean job was done. On Plot B, which was adjacent to Plot A, the slash was piled only. Burning of the piles will be done at a later favorable season. The two plots were as nearly similar in stand, proportion of species and exposure as could reasonably be expected.

The results are compared as follows:

Timber stand: MBF	Plot A 20 acres Forced burning	Plot B 20 acres Piled only
Western larch	36	63
Douglas fir	44	55
Western yellow pine	139	139
	219	257
Stand per acre MBF	10.95	12.8
Slash disposal		
Total man hours	240	213
Total cost	$111.24	90.10
Unit Rates		
Man hours per acre	12	10.65
Man hours per MBF	1.09	.83
MBF per 8 hour effective day	7.3	9.6
Cost per acre	$5.56	$4.50
Cost per MBF	$0.508	$0.35

It will cost 5¢ per MBF to burn the piled slash on Plot B, which will run the item of cost up to $.40.

The method of piling and burning in two operations apparently is the cheaper method on slopes with gradients above 20 per cent. The principal cause for the difference in cost is the smoke nuisance. The smoke carries up the slope and forces the men to throw slash on the fires from the side or uphill. But when piling alone is done, slash may be thrown downhill on the piles to the greater advantage. This differential should not hold to the same extent on flat areas.

But certain advantages of disposing of slash in one combined operation (forced burning) will favor its use on the flatter ground at favorable seasons of the year. Such advantages are the removal of the hazard once for all; if conditions suddenly develop to favor the running of fire, a considerable crew is on hand to suppress it.

It was concluded that a cost of $0.50 per MBF for slash disposal under the present wage scale should be sufficient for the western yellow pine type.

CAST YOUR BREAD UPON THE WATER

By S. A. Boulden, Cleveland

Some Patrolmen and Rangers never seem to overlook an opportunity for publicity. They see that "Take One" boxes are supplied with Forest Service literature, and never fail to hand out some publicity material when a camp fire permit is issued. In passing campers, a wide-awake Ranger comments on the neat appearance or the need for cleanliness around their camps. Such men are really giving value to the Service and the public, in fire prevention, as few campers will leave a camp fire unextinguished or throw away a lighted match if these dangers have been brought to their attention by some Forest officer.

The Lookout men are in a position to do a great deal of educational work by explaining the activities of the Service to visitors, showing them how we locate fires, the use of the heliograph, action taken when a smoke is detected, and giving courteous attention to the questions asked.

CAST YOUR BREAD UPON THE WATER (Cont.)

No opportunity to explain our work to Boy Scouts and similar organizations should be overlooked. They are usually interested in forestry and will later be taking part in the country's welfare.

We sometimes wonder why we do not get appropriations for certain projects, the need of which is very apparent to us. Possibly if we gave sufficient attention to explaining to the public the work we are trying to carry on and the benefits derived by them through the activities of the Forest Service, such appropriations would be forthcoming.

DATA OF USE TO ROAD AND TRAIL BUILDERS

Based upon 14,939 man-days subsistence, the following list shows the amount of various articles consumed per day per man on certain road projects in D-1. The data was compiled by F.E.Bonner, Assistant Chief Engineer. Based as it is on the large number of man days, or subsistence days, the amounts given opposite the various items of food ought to furnish a ration quantity list of more than average worth._-E.W.K.

Ration List Per Man Day (3 rations)

Item	Unit basis for cost per ration	Average amount of ration	Item	Unit basis for cost per ration	Average amount of ration
Bacon	#	.1334	Lard compound	#	.0470
Baking powder	#	.0102	Lemons	Doz.	.0003
Beans, canned,			Meat, fresh	#	1.5333
string	1¼ pt.can	.0443	Macaroni	#	.0256
Beans, navy	#	.0411	Milk, evaporated	Can	.3503
Beans, lima	#	.0307	Molasses	Gal.	.0013
Butter	#	.1467	Mince meat	Pkg.	.0020
Catsup	Gal.	.0024	Onions	#	.0657
Corn meal	#	.0116	Peas, canned	1¼ pt.can	.0556
Cornstarch	#	.0095	Pickles	Gal.	.0066
Cereals (Rolled			Potatoes	#	1.4582
oats)	#	.0216	Rice	#	.0209
Cheese	#	.0344	Raisins	#	.0226
Chocolate	#	.0037	Soap, laundry	Bar	.0701
Cocoanut	#	.0036	Soda	#	.0043
Coffee	#	.0741	Sugar	#	.4823
Corn, canned	1¼ pt.can	.0582	Sugar, brown	#	.0017
Crackers	#	.0153	Sugar, powdered	#	.0139
Currants	Pkg. #	.0170	Salt	#	.0460
Eggs	Doz.	.1483	Sago	#	.0042
Extracts: lemon	Pt.	.0013	Spices	#	.0059
vanilla	Pt.	.0010	Syrup	Gal.	.0103
Fish, cod	#	.0185	Salt pork	#	.0026
Flour	#	.9646	Spaghetti	#	.0025
Fruit, canned	Gal.	.0690	Tapioca	#	.0079
Fruit, dried	#	.0908	Tomatoes, canned	Gal.	.0225
Fruit, fresh	#	.0116	Tea	#	.0082
Gold dust	Pkg.	.0062	Vegetables, fresh	#	.1515
Gelatine	Pkg.	.0012	Vinegar	Gal.	.0019
Ham	#	.1658	Vermicelli	#	.0012
Jelly	#	..0218	Yeast	Pkg.	.0137

A. D. 1922

Back in 1906, a member of the Forest Service sent in to Mr. Gifford Pinchot a compilation of Forest Service data. There was no date on the sheet to fix the time when it was compiled. Mr. Pinchot sent it back to the employee with the memorandum:

"As a Forest Service record this is absolutely useless."

The clerk spent much time going over it again to learn wherein it was defective. After comparing each figure to prove its correctness, he very meekly went into Mr. Pinchot's office to inquire what was wrong with it. He was informed that the sheet did not carry a date.

The dating of papers in those days got to be almost an obsession with nearly all Forest Service employees; even initials on letters would be dated. The rule nowadays seems to be working the other way. In the examination of a record involving a land exchange case recently, I found three maps and ten compilations of figures and not one of them was dated. This caused much confusion, particularly when the papers were spread out on the desk to study.

Too much importance can not be stressed upon this feature of official records. Every paper, map or exhibit to go into a record should carry some date or should refer to a letter of a certain date.--W.J.Mangan.

THE TRAIL TO THE SETTING SUN

As I look back o'er the winding track that leads to the
rising sun,
There's a poignant pang, like a bowstring's twang, when I
think that my race is run,
For the lone camp fire in the swamp and mire, or high on
the mountain peak,
Has spread its dust, as a camp fire must, when the distant
spaces speak.

Now I long for a night in the camp fire's light, a pipe and
a trusted friend,
With the darting blaze and the white smoke's haze and no
thought of the trail's true end.
And I dream - and sigh for the wild duck's cry, with the
song of the wind in the brakes;
Just to make my way at the break of day to the plains and
the distant lakes.

There's a certain charm in a night alarm, or the cry of a
frightened loon,
And the crunch, crunch, crunch as the horses munch the
grass 'neath the rising moon.
Yes, I want to get back from the beaten track to the smell
of the trees again,
Where a man's scot-free and he laughs in glee at the book-
wrought fetters of men.

Have you ever heard some restless bird away there in the
dark,
Where the wild cat creeps - then swiftly leaps and leaves
his crimson mark,
While down by the lake, in the matted brake, a bullfrog
croaks in the grass,
As with sulking fear, near a rotting steer, the coyotes
chant their mass?

When the morning light drove off the night, and the embers
cold and gray
Made a ghostly mound on the dampened ground at the break
of the new-born day,
With the fire just right and pipes alight, we laughed as the
teapot sang,
And the horses pranced while the trail hounds danced round
the heels of my bay mustang.

Now I chain my mind to the daily grind, and I think with
a rueful smirk
Of the days gone by and the boundless sky, and this hellish
thing called work,
While my fingers itch for the diamond hitch and the cool,
white butt of a gun;
Fate shuffled the pack, but I think I'll go back to the
trail to the setting sun.

--Stewart Van Der Veer in Outers-Recreation.

"HASTA MANYANA!"

It happened nearly two years ago, but I haven't forgotten it yet.

The stenographer laid a big folder of jumbled typewritten and mimeographed material on my desk.

"What's that?" I said - I was new then at the game in Washington.

"Oh! that's the WEEKLY BULLETIN," she replied. "You're the editor."

I don't remember being particularly elated over the job thus wished on me because I could recall some hard things that I had heard said about this self-same publication. Still, like a "new broom," I wanted to change things, and it was no time before I had a lot of "betterment" plans for our house organ. I still have most of them filed away in my desk, neatly bound with red tape.

But we did make some changes, and now the SERVICE BULLETIN is said to be the best house organ in the Department. It heartens a man to hear such things, though the credit is not mine. It belongs to the officers who have so faithfully stood behind this publication through thick and thin.

Sure! We can improve the BULLETIN a lot even yet if the men in the field will take a livelier interest in it. You may not all be able to write like the Forester, or say things after the manner of some of our "efficiency experts," but you never can gauge your capacity by not trying. There's just two things to remember - your story should be of general interest and must be short and snappy. That's old stuff, I know, but worth remembering.

With this issue I am turning over the blue pencil and the shears - the working tools of all editors, even amateur ones - to your new editor, Thomas H. Gill. Give him your whole-hearted support; he will need it, because the job isn't any "indoor sport." As for myself, I'm proud of our SERVICE BULLETIN, and that I have had a hand in its making. To me it is the one link that binds together every man and woman in this organization of which we are so proud. I hope it means as much to you.

Wallace Hutchinson, Editor.

WASHINGTON NOTES

A Prize Winner: "Joe" - whose personal pride in mimeographing the BULLETIN has added much to the appearance of our house organ - has gone and won a prize. The WASHINGTON NEWS last week awarded Mr. Joseph Santucci the $50 prize for the best human interest contribution to its pages. The subject follows:

The Motorman

> Few people realize the responsibilities of the motorman's job.
>
> Literally, the lives of the passengers are in his hands. His attentiveness to duty at each corner saves dozens of smash-ups daily, for there are many reckless automobile and truck drivers who insist upon taking chances.
>
> It is due to the motorman's care that passengers may sit back and enjoy their papers in comfort and feel no anxiety. Again, notice him when he drives past a school and how he watches the children running across the street.
>
> The other morning one motorman stopped his car fully five minutes to avoid running over a cat.
>
> He has simply got to be on the job all the time to prevent increasing the death list of reckless drivers.

Joe says he's going to invest it in coal.

Another Nosegay for the Forest Service: Dr. Benjamin Lincoln Robinson, Professor of Botany and Curator of the Gray Herbarium, Harvard University, having recently had occasion to examine some specimens from the range plant herbarium of the Forest Service makes the following gratuitous comment anent Form 767:

WASHINGTON NOTES (Cont.)

"I ** note with interest the admirable detail in the labeling of the specimens. There is often a woeful lack of such exact data on the labels which accompany plants received, and it is frequently very difficult in monographic work to ascertain from labels the precise conditions of soil, habitat, exposure, altitude, etc., in which the different species occurred in nature. By providing your specimens with careful data you give them lasting value for reference."--W.A.D.

Tree-planting Service: The Rev. Oliver M. Fisher, rector of St. Luke's Church at Kinzua, Warren County, Pa., will observe a tree-planting service on Sunday, October 1. He was provided with 150 Norway spruce seedlings at the exhibit at the Warren County Fair, and he expects to have each member of his flock plant a tree before the sermon. Rev. Fisher serves in a Philadelphia pulpit each winter, spending his summer at Kinzua. He is a brother of "Bud" Fisher of Mutt and Jeff fame.--Pa. Service Letter.

FOREST PRODUCTS LABORATORY

Laboratory Gets $2,500,000: Not entirely a yellow headline, as there were received from the Treasury Department to be de-inked and made into paper 150 pounds of currency, which, however, had been cut up and pulped. Assuming a $1,000 value for each bill, the sheets of pulp represented $2,500,000.

The first run of paper made in the Laboratory resulted in a poor quality of material because of the high percentage of foreign particles in the bills; later runs indicate better success in making a clean product.

As two to three tons of bills per day are macerated at the Treasury Department at Washington, the reclamation problem is one of importance, even if the product can be made into wrapping paper only.

Sawdust-Packed Timbers: Forty huge Douglas fir timbers,packed carefully in sawdust and shipped from the Puget Sound Country in a closed box car to prevent drying out, arrived recently at the Laboratory for testing in the million-pound testing machine.

Half these timbers will be tested green and half air-dry to determine the strength of wooden columns and the effect of defects and drying on such material. Up to the completion of the big machine such tests were impossible.

Similar tests are being conducted on southern yellow pine timbers, and entire work being done in cooperation with the National Lumber Manufacturers' Association.

DISTRICT 1 - NORTHERN DISTRICT

The Headlund Box Company of Spokane was the successful bidder on approximately fifteen million feet of timber on the Wall Creek chance, Pend Oreille. The appraised value of approximately six million feet of live white pine was $4.50 per M. The bid was $6.75. There were two other bidders and the price received is considered very encouraging.

Total Rainfall at Spokane during the months of May, June, July and the first half of August was approximately .17 of an inch. The average maximum temperature was 85. On August 19 it had been 103 days since there was a rain of .20 of an inch. Does anyone wonder why District 1 has fires?

Pinkham Ridge Fire Bugs set 57 fires in one day this year, topping their maximum one day record of last year by 17. We are expecting some one to inquire whether the district is in league with these "home builders" to keep up a big fire record for the district.

The Coeur d'Alene Forest is proposing to offer for sale about 80 million feet of timber on Burnt Cabin Creek. A rather unique feature of this sale will be a provision in the contract requiring the construction of a logging railroad from Hayden Lake into Burnt Cabin Creek on a survey made by the Forest Service. This railroad will be completely depreciated in the appraisal against the 80 million feet of timber on Burnt Cabin Creek and will become the property of the United States after completion of the sale. It will then be available for transportation of several hundred million feet of additional timber from the Little North Fork.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Sheep Shearing: Wyoming was the pioneer of the installation of large shearing plants constructed according to the Australian specifications. There is a growing tendency to get back into the habit of hand shearing on the ranches or ranges. Some of the objections to the larger operations are the high cost per head for shearing, congestion which occurs in bringing such a large number of sheep to one locality and the reported commercializing of these plants, the effect of which is to handle the sheep roughly, perhaps shearing too closely and otherwise injuring them in an effort to get as many of the sheep through the plant as possible in a given time. There is also the danger of infection to the plant by running such large numbers through. There is a growing tendency, too, to shear later in the spring and avoid the terrible losses which sometimes occur from the early shearing in late spring storms. We had looked upon the Australian system as a big step forward, particularly from the standpoint of grading the wool, but the favor seems to be somewhat on the wane at the present time in parts of Wyoming.

Planted Trees Benefit from Grazing: In the spring of 1919, a project was started on the South Platte watershed on the Pike Forest to determine the effect of cattle grazing on yellow pine plantations, and the effect of both on erosion of a loose gravelly soil. Four small drainage areas are involved - two being fenced (one planted and the other unplanted) and two are not fenced (one being planted and the other not planted).

So far the results seem to indicate that the planted trees have benefited by grazing, although the evidence is not as clear cut as desirable, since the heaviest loss on the fenced plots occurred during the first summer, during which time there was little grazing on the unplanted areas, as it is used as yearlong range.

Check plots established in 1921, however, show a greater loss on the fenced than on the unfenced area, indicating the effect of the heavier grama grass sod that is beginning to start. The better stand of planted trees on the grazed area is attributed to the reduction of competition due to grazing, thus making more moisture available for the trees. The last examination of the grazing quadrats in the protected area revealed a slight increase in the proportion of grasses of all kinds, but not as many as were expected. This indicates that contrary to the generally accepted opinion it takes longer than three years for a heavily grazed range to recover.

DISTRICT 3 - SOUTHWESTERN DISTRICT

The Forest Management Conference: will be held on the Apache Lumber Company sale area at Cooley, Arizona, during the week beginning October 30. The formal representatives of D-3 will be Pooler, Marsh, Pearson, Lang and Loveridge. In addition, several other Supervisors will be in informal attendance. The gathering together of men from all the districts in the pine timber of the Sitgreaves is not only a high honor to D-3, but ought to go a long way in convincing foresters in general that D-3 is a timber country with as pressing, important, and difficult management questions as can be found anywhere in the country.

Cheney Badk to Lands: Shift of positions will give the District Office of Lands the benefit of Cheney's long experience in this branch at a time when such growing activities as Land Exchange are looming large. With the ability of the Solicitor's office to provide a capable man for the District law office, District Forester Pooler welcomes the opportunity to secure the transfer of Cheney back to the roll of the Forest Service where, in addition to his general duties in Lands, he will again take up the important task of administrative economies that has had to lapse during the period that he has been in Law. The position of Assistant to the Solicitor is to be filled by the transfer of Mr. A. McNaught from the office of the Solicitor at Washington. Mr. McNaught is expected to arrive in Albuquerque within the next few days and will assume the duties of DL on October 1.

Northern New Mexico Fair: The Department of Agriculture exhibit was one of the major features. This is the second year that the various Bureaus that are active in the Southwest have combined in a consolidated showing at Raton, New Mexico. The Bureau of Public Roads, Forest Service, and Biological Survey made up the main sections, while the Bureau of Animal Industry had a large panel of pictures on loco diseases. Mr. E. F. Antila of the B.P.R., Supervisor Loveridge of the Carson, and Mr. R. E. Luekenbill of the Biological Survey represented the different Bureaus and Mr. G. H. Cook of the District Office of Public Relations had general charge as Chairman of the Department Exhibit Committee. In the Forest Service section fire prevention and the work of the Forest Products Laboratory were given prominence. A miniature mountain top 6 x 8 feet with lookout tower and guard cabin all made up to scale and an electrically driven model of the box-testing drum used by the Laboratory were the outstanding object lessons. Less important portions of the Forest Service display were illustrated by relief maps, panels of pictures of the Carson Forest and various activities of Service work. Quantities of literature were available for distribution and were well patronized. An issue of one of the local papers that appeared on the last day of the fair contained a column and a half about the Federal exhibit.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Mr. George G. Anderson, of the Washington Office arrived in Ogden Monday and will remain two weeks in this District. One week will be spent in the District Office giving such advice and assistance as may be necessary regarding the personnel, procedure, business methods, etc. He will also visit one or two Forest offices to come into closer contact with the work of the Supervisors' offices, and also to make suggestions regarding economic methods.

Fire Prevention Propaganda: While at St. Anthony recently, I was given some circular wind shield stickers gotten up by the St. Anthony Kiwanis Club and distributed to all cars going through the town on the way to Yellowstone Park. It advertised St. Anthony Sub-irrigated land, grain, seed peas, and other crops. The point of particular interest to me was that on the bottom and in one of the most prominent parts of the sticker the following words appeared: "The woods are dry - be careful with fire." As soon as I got up to the Supervisor's office I inquired how they had been able to get their fire prevention "dope" on this sticker and was surprised to find that it had been placed upon the sticker without any solicitation or request by the Forest Service. This seemed to me to be one of the greatest compliments that had been paid to the Forest Service in a long time. The leaven of the Forest Service fire prevention propaganda is certainly working.--C.B.M.

Unmerchantable Timber? When we note the great areas of what is now considered unmerchantable timber on many of our Forests, we perhaps wonder whether it is ever going to be worth anything at all. We all hope that a demand for it will arise, but it sometimes looks far away. As an example of what can happen, look at this. I was reading Bulletin 67 the other day - "Forest Reserves in Idaho" - full of the controversy between Pinchot and President Roosevelt on one hand and Senator Heyburn on the other. In scrapping about the area that is now the Targhee Forest, Senator Heyburn contended that the Forest was largely grazing land and did not even have protective value. Senator Dubois opposed his views and stood on the side of Pinchot and Roosevelt. Even he, however, said, "The timberland comprises forests of inferior lodgepole pine with occasional bodies of red fir. They are not valuable for lumber." In 1922, - 18 years after this was written, $32,000 worth of this "worthless" timber was sold, and the development is just beginning. The population has increased tremendously around the Forest, and about 2500 S-22 sales were made last year. Eighteen years ago there was no indication of such a development.--F.S.B.

DISTRICT 5 - CALIFORNIA DISTRICT

He Found Out: A new phase of the dangers of unextinguished camp fires developed recently at Mammoth (Inyo Forest) when the Ranger spotted a pile of suspicious looking ashes and thrust his hand into them to see if the fire had been thoroughly extinguished ------ it hadn't!!! We expect to see asbestos gloves on next month's requisition.

A Progressive Organization: The following paragraph, taken from the Articles of Incorporation of the Fruit Growers Supply Company of Los Angeles, California, will be of interest to all foresters - as showing the advanced stand taken by this progressive organization on matters dealing with forestry and protection:

"To engage in the business of growing trees, to carry on experiments in growing trees which will produce lumber for commercial and box purposes; to cooperate with, and contribute to, the Government, State or Federal, or to any department of either interested in or working upon the problems of reforesting lands from which the timber has been cut; to enter into any arrangement or agreement with the Government, State or Federal, or any department of either, with reference to carrying on of experimental work in connection with reforesting lands or in connection with the handling of the lands of this corporation so as to develop in the future trees for commercial purposes; to cooperate with the Government, State or Federal, by all proper means and agreements conserving the timber and natural resources of the Government; to encourage forestry in all its branches."

Rather Convincing Evidence: Various members of the Forest Service and even men from the Washington Office have often brought up the question as to how much effect our educational work has on the prevention of forest fires. Some of these men have seemed rather skeptical as to what we were accomplishing with the money and time spent in exhibit work, talks to schools, clubs, etc., and distribution of publicity material.

While in Los Angeles, I had an interesting talk with our old friend, John D. Maxfield, who is now in charge of the Safety and Fire Prevention Department of the Los Angeles Chamber of Commerce. Maxfield informs me that publicity in fire prevention has surely paid in Los Angeles, and from the figures given me he apparently makes a good case. I am informed that the Los Angeles Fire Department has not added a man or any extra equipment to that Department in the last seven years and that notwithstanding the enormous growth of the city the actual fire losses in Los Angeles last year were $400,000.00 less than they were seven years ago. On the other hand, the Los Angeles Fire Department is constantly carrying on publicity work of all kinds. Certain members of the Department spend all of their time lecturing to schools, clubs, churches, etc., and in writing items for the newspapers. Maxfield is spending part of his time traveling around Los Angeles with members of the Los Angeles Fire Department, giving talks on fire prevention at various places and having personal interviews with owners and proprietors of factories, stores and all kinds of business establishments. The Los Angeles Fire Department contends that it is only through this continued publicity work that they have been able to reduce the fire losses in that city and to hold down expenses for the Fire Department to a figure much lower than is found in most cities of that size. From these facts it seems evident that publicity work is paying in Los Angeles and I confidently believe that the same is true in our own work.--L.A.B.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Cost of Administering Timber Sales: A bunch of Forms 822 (d) have just been compiled in the District Office for 36 "project sales" and for small sales in five representative ranger districts. Marking timber in yellow pine sales seems to cost from one to three cents a thousand feet, and marking seed trees in Douglas fir sales from a mill to a cent a thousand feet. Scaling is the largest element of cost and runs all the way from 3 cents to 28 cents a thousand, depending on the regularity of operation in Government timber, the daily output and the scaling chance. Scaling on the largest sale in the District cost last year only $.057 per thousand feet cut. On most of the big sales it is under 10 cents. Supervision costs one to four cents, occasionally higher. The total cost of administration of the "project sales" in the Douglas fir region for the past year and a half is $1.37 per M feet and for the yellow pine region $.215. The reasons why the west side sales are cheaper to run than the east side are obvious. On this basis, the cost of administration amounts to only about five to eight per cent of the receipts from the stumpage - a not unreasonable amount if all sales can be kept pretty close to this average. Naturally, small sales cost more to administer than large sales. The records for the representative ranger districts are rather meager, but it looks as though Class A and B sales cost about $.75 per M feet to administer.--T.T.M.

In Tune: The Portland Oregonian has in times past been rather a consistent critic of conservation, Gifford Pinchot, and Alaskan affairs. The following extract from an editorial of August 25 is therefore of especial interest:

"The forest wealth of America is centered in Oregon. We, too, must resolve without delay to stop burning up our growing timber - must enforce our laws by drastic penalties, if need be. Else in the comparatively near future upon steep hillsides we shall be laboriously setting out seedling pines and firs as they do in Japan - in the hope of a crop that will require a lifetime to grow."

DISTRICT 8 - ALASKA DISTRICT

Associate Forester E. A. Sherman of the Washington office, and District Forester Chas. H. Flory were recent visitors to the Chugach. They made a trip to Fairbanks, going by auto over the Richardson Highway via Valdez, and out by the Government railroad through Anchorage.

L. J. Markwardt of the Madison Laboratory visited the Chugach in August. He spent two or three weeks on the Forest and secured specimens of six or eight species of native timber for a series of tests.

Toshito Satow, Japanese Vice Consul of Seattle, visited the Cordova office early in September on behalf of some fellow countrymen who were interested in a fox ranch in the Chugach.

Stock Breeders' Associations are no longer confined to the grazing Forests. On August 21 fox ranch permittees of the Chugach were organized into an association in response to a meeting called by Supervisor W. J. McDonald. Nearly every permittee on the Forest was represented. The organization adopted the name of Blue Fox Breeders' Association of South-Central Alaska.

One of the first actions of the association was the posting of a reward of $1,000 for information leading to the arrest and conviction of poachers. Resolutions were adopted asking the Secretary of Agriculture to place a permanent closed season on blue foxes, the idea being to destroy the possibility of poachers offering the alibi that they secured blue fox skins on the mainland. As the blue fox is not indigenous to the coast of Alaska, and occurs on the mainland only as individuals escape from island fox ranches, the request was considered reasonable by Mr. Walker of the Biological Survey, who stated that he would forward it to Washington with his recommendations for approval.

The association has requested the Forest Service to provide appropriate signs for posting about the islands so that it will be impossible for strangers to land there and not be informed that the island is occupied as a fox ranch.

* * * * * * *

Here's to the man who plans things -
Builds things - makes things -
Who prates not of wonders of old,
Nor gloats upon ancestral gold,
But takes off his coat, and takes a hold
And does things.--Plico.

RANGER BILL SAYS:

A good disposition is more to be prized than a new uniform.

The trouble with most Rangers' and Supervisors' Conferences is that they're too blamed unanimous.

'Pears like a lot of Service problems are still bein' solved by Stone Age methods.

The efficiency experts ain't long on "smiles," but maybe that's 'cause their ideas usually produce 'em.

The best you ever get out of life is what you do to make the other feller happy.

- THE END -

Service Bulletin
U. S. FOREST SERVICE
(Contents Confidential)

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FINE POINTS IN RING COUNTING

By W. R. Hine, Southern Exp. Station

The farmer will usually tell the age of a particular stand of second growth pine by recalling how long since the land on which it is growing was "turned out." It is, however, generally understood that the "grains" on concentric rings on a stump or end of a log are a record of the age of the tree. But when the owner attempts to compare the number of rings on a given tree with what he knows to be its age, it may happen that the figures do not agree. He therefore loses faith in the rings.

In the course of nine months' field work spent on a growth study of the four more important southern pines, some noteworthy points concerning their rings of growth were observed.

The difficulty most commonly met with is the determination of the true rings from the false rings. During the period of more rapid growth, it is not uncommon for the southern pines to make more than one growth during a season. Many individual pines have been noted which have made three and four growths in a single season, each time with a brief resting period between during which a complete bud was formed. The longleaf pine often shows three whorls of branches between the two main whorls that mark the end of a year's growth. The result of each of these resting periods is a more or less complete ring of darker cells resembling in some cases a true ring. Many longleaf and loblolly and to a lesser extent slash and shortleaf have been counted which showed from one to three of these false rings between each of the true rings.

It is, of course, necessary to separate these false rings in order to secure the correct count. On each section where any doubt as to the possibility of false rings existed, several counts were made from widely separated points on the circumference to the center. When the several counts did not agree it was necessary to trace the rings around the section. When this is done the false rings will disappear or join with a true ring. However, a true ring may also join with another in this same manner. To find out if such a ring represented a year in the life of the tree, it was necessary to count the rings from the circumference in to this doubtful one. Then one or more cuts were made at intervals up the stem. At each point the same number of rings are counted in in order to inspect the ring in question.

A greater number of false rings are found in the center of the lower sections of the stem. They occur in that part of the trunk which represents the period of most rapid growth. This is especially true of longleaf and loblolly. These rings near the center are best determined by slicing off a thin section with a knife. When this thin section is held to the light the true rings will stand out clear and firm in outline, contrasting very strongly with the various kinds of false rings.

After passing the stage of very rapid development, the southern pines enter upon a period of more or less uniform growth. During this time the annual layers are uniform and distinct. After this there may come a period of crowding. A tree puts on its layer of wood from the top down. It may happen therefore under crowded conditions that the lower portion of the tree receives only a faint layer, or in extreme cases, no layer at all. As a result of such a circumstance, several trees were found to show a greater age at 33 feet from the ground than at one foot. To clear up such a mystery a cut was made near the crown. On this section a careful count was made from the circumference to a ring which would be readily recognized on other sections. This same ring would then be picked out on the stump and given the correct number as determined above, and the rest of the rings on into the center numbered consecutively from it. In this way the correct age at any given point on the stem could be readily determined.

NEEDLESS DESTRUCTION OF GAME

Fifty years ago, or even less, wild life of all kinds was abundant in Florida. There was little or no check upon the destruction of game, yet it did not seemingly tend to disappear. The woods teemed with it and the sportsman did not need to travel far to get a full bag. Probably the rather scant population of the State at that time had much to do with its continued abundance.

Now the game is disappearing fast in spite of limitations set by law upon its destruction. This increasing scantiness of game has led to the formation of several societies for the preservation of wild life in Florida. There is one form of needless slaughter of wild life to which a contribution from the United States Department of Agriculture published in Tuesday's issue draws particular attention.

The practice of burning over the old grass in the spring for the sake of the new grass which springs up from the roots that the scrawny, tick-infested range cattle may have fresh pasturage results, as a matter of course, in the destruction of the nests and young of all ground nesting birds in the territory burned over. It destroys the food and the shelter of birds and other game. Quail are particularly affected by it. Weed seeds and insects form the dietary of these and other birds.

Sometimes these birds are trapped by the flames and burn to death. When not they are driven on to the area occupied by other birds and the competition for food is severe. If the woods catch fire valuable trees may be destroyed and, in any case, tree-haunting birds and animals are driven out of their natural shelter to other parts and their young are often killed. This takes no account of the other objections to the burning of the woods, such as the destruction of the improvements made by settlers and the imperiling of their lives and those of their families.

In this manner much of the wild life of the State is destroyed every spring. Practically cut off from every market outside of Florida, why should the range cattlemen persist in this practice of burning over the woods? The cattle for whose food they thus provide are of little value nowadays. If the next legislature is composed of a majority of forward-looking men, we believe stringent laws will be passed to curb this practice and the result will show, in one respect, in a slower decrease in the amount of wild life in Florida.--Florida Times.

HIDDEN BOLE INJURIES CAUSED BY FIRE

In appraising the three main phases of fire damage resulting to the stand from a given ground fire, namely destruction of merchantable timber, injury to crown and bole and injurious after effects, not sufficient weight is given to the injury to the bole. All these factors are so closely interwoven and injury to the bole in particular is so intimately connected with future loss and deterioration, either through girdling in subsequent fires or through its relation to decay, that appraisal, to be of value, must strongly emphasize this factor.

Three types of fire injury to the boles are found on trees of forest areas swept by repeated ground fires when appraisal is made shortly after the last fire:

1. Old fire scars.
2. Extensions to old scars.
3. New lesions.

old fire scars usually result from successive fires. Most of them are open and conspicuous. A few are healed over but are still recognizable by the calluses covering them. Of others the record exists only within the wood of the bole itself. Where the living tissues along the edges of an old scar have been killed by a recent fire we speak of extensions. They usually form an irregular border to an old scar generally measuring several inches on the sides and somewhat more at the upper end. Very much more serious extensions often occur, however.

New lesions are local areas of cambium killed in the recent fire and differ from extensions in having no connection with old scars. Though most of them are small, some will be found to more than half girdle the tree and extend up 10 feet or more.

The processes in the formation of both extensions and new lesions are much the same. The cambium is cooked but the bark is not burned off. Occasionally, as where an old log burns against the base of the tree, the fire may burn through the bark in spots and into the wood. In the great majority of cases, however, the injuries are completely hidden by dead bark which in the beginning remains closely attached to the wood.

Subsequent exposure of the injury ordinarily occurs in the following way: the bark is first separated from the wood by drying out and consequent shrinkage, often aided by the work of secondary insects. Later the bulging growth of calluses bordering the wound beneath the bark force the latter away from the wood. Meanwhile the bark checks and commences to break up, finally falling away altogether and exposing the wound. The process from all appearances is a slow one and years may elapse before it is completed.

Certain symptoms which help in detecting hidden injuries, both extensions and new lesions, are: exposure of the dead wood in spots, woodpecker holes; insect dust and resin flow localized on an area of heavily charred bark on the bole. Heavily charred bark on the bole on the side where some log, snag or stump burned nearby gives an additional clue. These symptoms, however, are found too infrequently to allow for accurate appraisal by superficial observation. In most cases it is necessary to make incisions through the bark to locate and measure hidden injury.

Studies of sample plots on the White Horse Burn of 1920 on the Modoc National Forest made 1½ years after the fire showed that of 214 living trees on the plots, 56 had 72 old fire scars, 67 of which were still open and 5 recently closed. All open fire scars had extensions. Of the latter all but 7 were entirely hidden by a covering of dead bark. Nearly 50 per cent were serious, and it can be definitely stated that the larger the open old scar, the heavier is the extension.

311 new lesions were found occurring on 131 of the 214 trees. 49 or about 16 per cent of these lesions were serious. All but two were completel covered by the charred bark. In the case of the two exceptions the flames had eaten through and into the wood in small spots only.

The damage from the 1920 fire may be summarized as follows: of 214 trees 152 are fire scarred. 149 of the latter have extensions, new lesions or both. 54 have severe new injuries, 80 per cent of which could be determined only by cutting through the bark. Though the remainder could be located and rated without making incisions, they were not readily apparent in superficial observation. In other words, 54 or about 25 per cent of the 214 living trees have serious new injuries to the boles which under ordinary circumstances would not become readily apparent for a number of years following the fire in which they were formed. It is obvious that in any appraisal of fire damage shortly following a fire which considers injury to the boles, proper allowance must be made for hidden injuries.

Studies are now under way to determine how soon after the fire occurred appraisal of new injuries may be accurately made by simple methods.

FORESTRY STUDENTS HELP IN REGENERATION SURVEY

By C. F. Korstian, Appalachian Experiment Station

A novel and effective bit of cooperation in investigative work was recently carried out near Asheville under the direction of the Appalachian Forest Experiment Station and the Iowa State School of Forestry, represent by Professors D. S. Jeffers and H. J. Andrews. This is how it happened. The Iowa professors, who were camped with seventeen students at the Davidson River Ranger Station on the Pisgah National Forest, were anxious to round out their party's experience in the forest types of the region with a visit to the spruce type. A Forest Service field party of three assistants under the direction of a member of the Station staff was running a regeneration survey on cut-over spruce lands of the Suncrest Lumber Company on the Pigeon River watershed, not many miles from the Iowa camp. To the mutual advantage of the School and the Experiment Station, arrangements were made with the lumber company, and the Iowa party took their blankets and notebooks into the spruce type on Pisgah ridge. There the students were divided into two groups and put to work. While one group was engaged in growth studies, under the direction of Jeffers and Andrews, the other was working on the Experiment Stations regeneration project. In the latter work the students were handled in crews of three, each crew under the immediate guidance of one of our regular field assistants.

Three days on the work under favorable weather conditions resulted in a large amount of valuable strip data on spruce and fir regeneration for the Station, while as a result of participation in these intensive studies the students gained a degree of familiarity with the spruce-fir type they would otherwise not have secured.

FOOLS' NAMES AND FOOLS' FACES

The pest who carves his initials or scrawls his name promiscuously over the landscape may find a check to his artistic endeavors in the gentle reminder by the local forestry office that such acts, when performed within the domains of a National Forest, constitute a trespass and are punishable by law. Equally so, the too zealous merchant who would have the virtues of Dromedary cigarettes or Beaconsfield baking powder greet us from every granite rampart along the roadside will find his publicity somewhat curbed.

In most cases the single reminder will be sufficient, for the majority of the offenders, it is probable, act not from deliberate intent to offend, but through failure to consider that the forests are the property of all, and that in defacing them they are wronging their fellows as well as insulting nature itself. There is a type of mind that can not seem to shake off the prepossessions of business even in the aloof solitude of the timbered wilderness. To such a mind a magnificent pine is only a potential signpost; a rugged rock facade is merely so much free advertising surface that will take paint admirably; a sunset is simply a lamentable waste of pigment that might better be applied in billboard art. "The primrose by the river's brim" is - well, probably something after which to name a new face powder.

Upon minds having this peculiar slant, the edict of the forestry department may have a salutary effect. At least, it will curb their operations. And it is to be hoped that it may stimulate them to investigate the why of the order, and thereby - who knows? - revive in them some dim, atrophied appreciation of natural beauty as transcending the meager efforts of man.--Laramie (Wyo.) Republican.

WASHINGTON NOTES

Captain Arthur C. Ringland, one-time District Forester at Albuquerque, is reported to have joined the benedicts, Miss Gerberding of California is the bride. The wedding took place in London, and the following day Capt. and Mrs. Ringland left for Constantinople.

HUTCHINSON GOES TO SUNNY CALIFORNIA:

Wallace Hutchinson, for the past two years Chief of Information in the Washington office, has left to assume charge of Public Relations in District 5.

As Editor of the Service Bulletin, creator of Ranger Bill and author of numerous popular articles on Forest Service activities, Mr. Hutchinson has become well known both in Forest Service and in general forestry circles.

Members of the Washington office will be sorry to see "Hutch" depart, but, as Ranger Bill might put it, "Sayin' good-bye aint half so hard when you know the other fellow's still part of the Big outfit."

Guineas from Rattlesnakes: That rattlesnakes are a paying proposition when carefully handled is the opinion of Assistant Forester Will Barnes. His article on "Rattlesnakes" published in American Forestry has been reprinted by a London publisher, and recently a check arrived for several guineas. Mr. Barnes now hopes to run this article in the "Soviet Scream" and receive a couple million rubles.

FOREST PRODUCTS LABORATORY

Laboratory Well Represented at American Chemical Society: Of the sixteen papers given at the meeting of the Section of Cellulose Chemistry at the meeting of the American Chemical Society in Pittsburgh, six are by Laboratory members and two others by men who were members; in addition three papers in another section are by Laboratory members.

The American Chemical Society is one of the oldest and strongest scientific associations in this country and the programs of the annual meetings regularly represent the most advanced research in chemistry.

This research, as given in the program, shows how intimately chemistry is associating itself with the practical problems of everyday life.

Fall Courses at the Lab: The 44 men that attended the courses given at the Laboratory during September were divided among the various groups as follows: boxing and crating, 6; kiln drying, 17; gluing, 9; and lumber salesmen, 12.

The last course was given for the first time; the others are well-recognized by the industries, many firms having sent two, some even more, representatives to successive courses.

Present plans are to give these courses three times a year, the next ones to be given in January and May.

Use of Douglas Fir Barrels Increasing: Tests on white oak and Douglas fir barrels lead to the conclusion that while the former excel the latter under ordinary shipping conditions those of white oak, if of indifferently selected stock, or of carelessly manufactured material, may be much less serviceable than Douglas fir barrels well made of properly selected material.

Apparently the use of Douglas fir to supplement white oak for barrels is gradually increasing. In 1909 very little was used, but by 1919 the annual production of slack staves had reached 23,822,000, whereas oak fell from 60,000,000 to 40,000,000 during the same interval. In 1919, 50,000,000 Douglas fir and 130,000,000 white oak staves were used in the manufacture of tight barrels.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Outbreak of Peridermium on Nebraska Forest: For years forest pathologists have warned against the shipment of trees and plants from one country to another, and even against their transportation from one region to another, since it has been repeatedly found that diseases, which in a certain regio are of little detriment to tree growth, when transferred to another region break out with great virulence. The white pine blister rust, which was brought over from Europe where it is not very serious, also the chestnut blight disease, which was brought from Japan, are examples of this. The danger of shipping forest stock from one region to another is again illustrated in an outbreak of peridermium on the Nebraska Forest.

In 1904 a shipment of forest-pulled seedlings from the Harney Forest was planted on the Nebraska Forest. Peridermium harknessii is quite commo in the Black Hills, where it is of little consequence. In 1912, Mr. C. G. Bates discovered a Peridermium harknessii gall on a small yellow pine. T tree was destroyed and no further evidence of the existence of the diseas was noticed until this spring, when an outbreak of considerable virulence occurred. Dr. Hedgcock, Forest Pathologist at the Bureau of Plant Industr inspected the diseased area in June and recommended the immediate destruction of the infected trees. Over 2,000 infected trees have already been cut and it is possible that as many more are diseased.

Jack and Scotch pine have not been attacked by the fungus. The alternate hosts of this Peridermium are Castilieja, Orthorcarpus and Pedicularis. Although one species of Castilieja has been reported from this region, Dr. Hedgcock was unable to find any plants. He is of the opinion that the disease has spread from pine to pine, or, in other words, is autoecious.

Very careful control measures have been installed to prevent a spread of this disease to the large areas of yellow pine plantations on the Nebraska Forest.

DISTRICT 3 - SOUTHWESTERN DISTRICT

The Mora Grant Case, involving title over two townships of land on the Santa Fe Forest which was decided by Judge Neblett against the Government after trial in 1918, was argued September 13 before the Circuit Court of Appeals at Denver, the United States being represented by special assistant to the Attorney General S. W. Williams of Washington, D. C. In event that the final decision is against the Government, a large part of these lands will probably remain in the National Forest administration through an exchange which is desired by the private claimants who are represented by Judge S. W. Davis Jr., Republican candidate for the United States Senator for New Mexico.

Measuring Success: How do we judge whether a Forest officer or a Forest personnel is a success? If he, or they, seem to be enforcing the regulations, getting along well with the public, and seem to be using correct machinery in administering the Forest, we are inclined to call everything O.K., but, after all, are these not merely superficial criteria of success? Why can't we apply our yardstick less to the machinery and more to the product? What doth it profit a man to claim he is enforcing Reg. G-X if his range nevertheless remains overgrazed and unproductive? To seek merit in being hard boiled about brush piles if he is nevertheless not getting reproduction on cuttings? To arise early to catch the trespasser if erosion is nevertheless eating the land? To build roads to recreation areas that floods are washing away? To make speeches on game that is nevertheless being exterminated?

Is not the time coming when the Forest Service, without relaxing needed emphasis on good machinery or conscientious effort, must measure success primarily by the condition of the Forest? Is not the time coming when we must devise ways to periodically appraise that condition and leave a man long enough in one place to show whether or not he is improving it?

New District Lawyer Here: Mr. A McNaught has arrived from Washington accompanied by his wife. Mr. McNaught will fill the D-3 position of Assistant to the Solicitor made vacant by Mr. Cheney's transfer back to Lands.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

"Game" Case: An interesting game case which Ranger Smith handled has just co to light, - because it was dark when he handled it. It seems that some overzealous hunters, and, by the way, the leading citizens of Albion, decided to hunt chickens a few days ahead of the season; whereupon, by a chain of circumstantial evidence, Ranger Smith connected them up with a sack containing 11 sage hens which he found on the Howell Creek Divide. Ranger Smith accompanied the delinquents to Burley about midnight, and Judge Winterburn, bei good-natured, came down, and about 2 o'clock in the morning Nick Albertson of Albion paid the Judge $25.00 for his little Sunday outing. In addition, the birds were sold for $3.50, which enhanced the game fund that much.--Minidoka.

Ranger's Cabin Robbed: There is a certain class of people frequenting the ranges who seem to think there is nothing particularly wrong when they enter sheep camps or Rangers' cabins and appropriate to themselves property belonging to others. One of such persons entered a Ranger's cabin not long ago and carried away things that did not belong to him. No great stir was made about the matter, but a lookout was kept for articles bearing marks of detection. A few days ago some of these articles were found, and it was only a matter of a short time before the young man who had taken them was called into Justice Lindsay's court to speak for himself. The evidence was clear, proving his

Ranger's Cabin Robbed (Cont.)

guilt, and the Justice gave him his choice of paying a fine of $25.00 or spending twenty-five days in jail. He paid the fine, with a definite understanding on the part of both himself and the Justice that if he should be called to appear on another similar charge, the $25.00 would not look as much as a drop in a bucket.

The name is withheld because of the apparent repentant attitude of the guilty person and on request of the Justice. However, this should prove a valuable lesson to others who may have done likewise or who may have like inclinations. This may be the first conviction for theft of property from camp premises on the range, but it is not the first time such acts have been complained of.--Wasatch.

Some Tree: August 8 Ranger Phillips scaled one tree at the Weed mill which contained 4,130 feet B.M. The first three logs were so large that the small mill couldn't saw them until after considerable axe work had been done to reduce their size.

DISTRICT 5 - CALIFORNIA DISTRICT

Another Incendiary: The Southern California Edison Company's high line has set 3 fires so far this summer, and in each case a buzzard was found burned to death. Evidently the buzzard flew between the wires forming a contact, caught on fire and fell to the ground, setting fire to the grass. A short on the high line can well be told at Fulton R. S. This is a good fire alarm bell because every bell rings to its fullest capacity, sometimes lasting for 2 minutes, usually burning out the Hot Spring and Glenville bells.--R.J.B. (Sequoia.)

A Hot Time was Had by All: The fire occurred on a small stream near where Meek was doing some mining and near a yellow jacket's nest. The bugs made it a little too hot for Meek, and Meek decided to make it hot for them by starting a little fire around their nest. He did a good job destroying the nest, but a darn poor job putting the fire out. He left it for safe, but it got away and burned over three acres. Meek paid the cost of suppression, which amounted to $23.40.--(Extract from the report of Ranger McMurphy of the Plumas.)

Will He Try It Again? Mr. Thiser from Los Angeles recently camped at the Mayfield Ice Cave. While out catching bugs and insects for pastime, waiting for the deer season to open, he discovered two small cub bears - a brown one and a black one. He proceeded to catch one or both of them. He said he had always wanted a pet bear and this was his chance to get one easy. He chased them up a small tree, then started up after them. The cubs called Ma Bear. Mr. Thiser was having quite a bit of trouble climbing to the first limb when he noticed Ma Bear trying to climb the same tree. After this discovery the only trouble he had was to keep the cubs out of the way, as they were climbing too slow for him. Anyway, he got to the top of the tree first. No need to tell you that he stayed there until Ma Bear and family were out of sight, which he says took about two hours. This has changed his mind about cubs being easy to catch.

A Suggestion when Posting Signs: Ranger Hamilton (Santa Barbara) writes as follows: "I have seen some signs posted this year on other districts and many posted heretofore on this district without the use of a washer of any kind, and invariably the enamel is chipped off at the screw holes. I even found some signs on this district mounted with 20d nails and no washers. There is no excuse for mutilating these signs in this manner. I have found that the best thing to use as a washer on the screws is a lead washer such as is used with galvanized iron in building. They sell at about 25¢ a pound. I think there are about 300 of them to a pound. When these are used the sign can be put up so that it remains solid and there is no danger of setting the screw too tight and breaking the enamel. There is no stain from the lead washer, as is the case with a leather one, and it is neater in appearance and does not rot out."

DISTRICT 8 - ALASKA DISTRICT

Alaska Game Association: Through the efforts of Supervisor W. J. McDonald and Executive Assistant L. C. Pratt, the Alaska Game Protective Association of Cordova, Alaska, was organized last spring. Mr. McDonald was elected to membership on the Advisory Board, and Mr. Pratt to the office of Secretary-Treasurer. Both are members of the publicity committee.

Much good work has already been accomplished, and greater achievements are hoped for another season. Among other results accomplished was an appreciable decrease in spring and summer shooting on the breeding grounds of waterfowl.

Dr. W. T. Hornaday of New York, when advised of the organization of the association, contributed $100 toward the good work on behalf of the Permanent Wild Life Protective Fund. The money was used in getting out a circular of information, 500 copies of which are being distributed by local merchants with sales of ammunition.

Grover C. Haneman, Forest Ranger in charge of the Anchorage district of the Chugach for the past six years, has resigned, effective August 31, to accept employment with the Kennecott Copper Corporation at Kennecott, Alaska.

Assistant District Forester M. L. Merritt spent a couple of weeks on the Chugach in September, principally in the Katalla district. He and Supervisor McDonald, accompanied by J. B. Reher of the Bureau of Public Roads, made a thorough reconnaissance of the proposed road between Mile 39 of the C. R. and N. W. Railroad and Katalla. A concerted effort is being made by local chambers of commerce and other interests to have this project approved, the contention being made that it would tend very materially to open up the great coal and oil resources of the Bering River region. The road would probably cost in the neighborhood of $700,000.

Service Bulletin

U. S. FOREST SERVICE

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THE SMOKE CLEARS IN DISTRICT ONE

Weather conditions on this date, October 5, indicate that another prolonged fire season in District 1 has probably come to a close.

Generally speaking, the season over the District as a whole has been the most successful experienced since 1916. Our average number of fires per year for the past fourteen years has been 1,211. For the 1922 season the number is about 1,300, a trifle in excess of the average.

Of the 1,300 fires handled this year, 52 per cent were caused by lightning, as compared with 34 per cent for the fourteen-year average. Man-caused fires are lower in number and in percentage than the average for the fourteen-year period. Do we dare hope that our Law Enforcement and Publicity campaigns have begun to "bring home the bacon?" It is too early in the life of both of these activities to hazard any positive statement, but the outlook really is somewhat encouraging.

The best features of this year's fire record are found in the low percentage of Class C fires and the relatively small area of National Forest lands burned over as compared with the fourteen-year average. Only 7.4 per cent of all fires this year reached Class C size. The average for District 1 has been about 18 per cent Class C fires and the lowest figure ever previously obtained was 9 per cent. Present estimates, which are, of course, subject to some revision, place the National Forest lands burned over at about 25,000 acres, which is about 2,000 acres more than was burned over during the 1921 season. The annual average area burned over during the past fourteen years has been 314,600 acres.

Suppression costs amount to about $181,724.00; a very high figure but still considerably below the amount for any year since 1916 and approximately half the average annual cost for the past fourteen years. The cost per fire from FF is approximately $140.00 as compared with $166.00 in 1921, $280.00 in 1920, and $934.00 in 1919. Certainly there is ample room for future improvement in this phase of the record, but it seems reasonable to suppose that the protection organizations of the District should find sufficient encouragement in the performance of the past two seasons to attack anew the problems of bringing down fire costs and acreage burned over which still, as ever before, loom larger than all of the other District activities combined.

A CHANCE FOR SALVAGE

The Government fire-killed timber on Marble Creek, St. Joe Forest, has been cruised and appraised, and is now being advertised. Between 8 and 9 million feet of white pine has been burned during the past summer. This timber was killed by a fire which occurred on privately owned lands and was handled by the Coeur d'Alene Timber Protective Association, but got beyond their control early in July. Owing to high winds and an unusually long, dry period, a large area was burned over, but a comparatively small amount of Government timber was killed. The Rutledge Timber Company probably lost 125 million feet of white pine, either fire-killed or so badly damaged that it will die within the next year. There seems to be a keen interest among various operators in the Coeur d'Alene region in the Government fire-killed timber. Several inquiries have been made concerning the fire-killed white pine, and it is expected that there will be considerable competition. The stumpage prices range from $6.00 to $8.00 per M. for green white pine, and from $3.00 to $4.00 per M. for dead white pine. It is expected that practically all of this timber will be cut during the year 1922, and if it is, the Government will not sustain any great stumpage loss, because a large portion of it will be scaled as green timber.

PRACTICAL FORESTRY IN KENTUCKY

By Ferdinand W. Haasis, Appalachian Exp. Station

He was my seat mate in the Pullman car, and the big "Forest Service" across the flap of my knapsack had caught his attention. He wanted to know my district and interests. It is very handy, sometimes, and rather broadly sociable to have a range extending from Maryland to Alabama.

He is a contractor, a builder of highways. He frequently finds it expedient to purchase outright small patches of land, 5 or 10 acres, for his camps, and when the workers have moved on he has these lands on his hands. So, knowing the value of locust posts and the rapid growth of the tree, he has been planting such areas to this species. Now he is considering plans for putting tenants on or near these plantations in order that he may have local residents to take care of them. In return, he will probably supply the lumber for a small house and barn, with perhaps a certain amount of garden or farm land. The abandoned camp buildings contain material scarcely worth hauling away, but sufficient for the proposed structures.

He has these little plantations scattered about the State of Kentucky, some of the stands being now 4, 6, and even 7 years old. And, notable to record, he requested that we place his name on our mailing list!

Truly this is a most interesting situation. Kentucky, without National Forests and with its State forestry organization defunct, yet has among its citizens at least one who is practicing forestry as a business proposition and who wants to know how to do it right. The forestry idea is growing perhaps more luxuriantly than we generally realize.

STICK!

The surveying crew in the Penn District is having its troubles in making the survey of the district boundary. The "Walking stick" plague is keeping the men on edge at all times. About the time Tommy Bietch wants to make an entry or examine a blaze, two or three "sticks" will start tickling him on the neck with their long legs. Then when Compassman Monsell thinks he has the flagman lined up about right, he finds that he is looking through the front legs of his pet "stick" instead of the slot of the front standard, or perhaps the "stick" has moved too far to one side. Monsell claims that his pet "stick" got so well trained that he could set the variation off on the compass with him. All he needed to do was to mention the figures and tell Sticky whether it was right or left. This worked fine until one day Sticky's lady friend dropped on the compass and then John had to get a new pet.

A person standing off to one side and watching the antics of the crew as the sticks crawled over them - and heard some of the remarks - would probably get an idea that he had dropped onto a crew possessed of peculiar ideas regarding the best method of getting through the brush. It was during a particularly bad stretch of stick country that the record of $4\frac{1}{2}$ miles was hung up for a single day's run.--Pennsylvania Service Letter.

THEY DON'T DO NOTHING ELSE BUT.

There was a time
When I visited a Forest
That I could talk
About trees and cows
And sheep and get some one
To listen to me -
But not anymore.
All the Foresters
Are Road engineers now.
They are building roads
For Flappers and Flippers
Of cigareete Butts
And burning matches,
To joy-ride on
And to muss up the
Scenery around all the
Pretty little lakes and
Streams where I used
To range - when the
Fishing was good.
It was an evil day
For the grazing men
When Congress decided
To give us all those
Millions for roads.
We used to think Uncle
Didn't have any money
Cause we never could
Get any to fix up Springs
Or trails or fences or
Anything necessary to
Keep the cows and sheep
From getting crippled
Walking over rocks and
Through the jungles to get
A drink or a bite of grass.
Seems like he has lots
Of money and also a lot
Of graders and trucks
And tractors and shovels
And scrapers and T. N. T.
For rent, and now-a-days
The Rangers are so
Infernal busy hauling
In pickles and jam
Bacon and ham
Smelly cheese and
Butter in jars to
Feed their road crews
That they haven't time
To see if the cows and
Sheep and horses have
Anything to eat or drink,
Instead of talking about
Range and Timber and
Such they all want to tell
You about how the
Big "Cat" pulls 'em out
By the roots and the T. N. T.
Makes a hole you could
Bury a house in and
How they are only spending
Four thousand nine hundred
and ninety-nine dollars
A mile. Gee! what a lot
Of fence all that money
Would build and besides
Think about how they are
Spoiling the scenery.
Everywhere you go now
You find tin cans and
Paper plates and wooden knives
And Forks and some of
The funniest looking people
Dressed in the queerest clothes.
The Grazing man sure
Has a hard life.
The only office
He feels to home in any more
Is in some old livery stable
That isn't a garage -
And there aren't any
Of them any more.

--E.N.K.

MILITARY FORESTS

By Clinton G. Smith, D-7

As an incident of the World War, the army purchased over 100 training camps in the Central and Eastern States. These areas varied in size from a few hundred acres to 100,000 acres or more. With the termination of hostilities and the demobilization of the army of 4,000,000 men to peacetime footing of less than 5 per cent of the maximum strength of the army during the war, the question of the disposal of the military reservations took definite shape. Before the war with increasing land values in the East, it had been found to be as expensive to maneuver troops with the attendant damages over private lands as to purchase them outright, and for this reason, among others, the War Department has decided to retain a number of camps for the purpose of training troops under conditions simulating actual warfare. These areas are retained with the knowledge that the Government would not be able to purchase lands as cheaply in the future as it has in the past. The retention of large blocks of land as military reservations and a locking up of the natural resources, is detrimental to the localities in which these reservations are situated.

It so happens that a number of the reservations are fairly well timbered and joint examinations made by military and Forest officers disclose that the dual use of the area for military and forest purposes is not only practicable but extremely advisable. It is safe to predict that attractive returns to the Government can be secured if these lands are protected from fire and trespass. This is particularly true of the forests in the Southern Pine Belt, where the well-known rapid growing loblolly pine can be brought to early maturity for sawtimber and where slash and longleaf pine forests can be turpentined at the age of 25 to 30 years. The realization of an income from these lands will be beneficial in that it is proposed to devote 35 per cent of the receipts to road and trail construction, and further, the local population will be given an opportunity to find profitable employment.

Provision for legislation of this kind has just been made in Senate Bill No. S. 3829, which provides that Fort Benning, Ga., be also created a National Forest, with suitable provision for joint administration. The outcome of this bill will be watched with interest, as there are a number of other reservations on which the Forest officers and military authorities agree that the natural resources should be administered by a corps of men especially trained for that purpose. The success of the undertaking seems assured from the results achieved on the Manzano National Forest, where similar arrangement has been in effect for 10 years.

FROM OUR OLD FRIEND DUBOIS

American Consular Service,
Port Said, Egypt,
September 6, 1922.

May I be permitted to greet my old-time friends through your columns? You don't know what pleasure it gives me to read weekly that P.G.R. is spellbinding schoolgirls in Beegum; that R.H.C. is still tearing down the advertising signs from Gaviota to Tejon Pass, that L.A.B. is putting his back into the recreation business and sending out passionate appeals for photographs of drowning babies and that T.D.W. is selling all the standing timber in Northern California.

If ever any of the Supervisors or Rangers want a good rest from timber, just tell them to take leave and come to Port Said. You can walk down to the Suez Canal, a hundred yards from my office door, take a small boat and cross over to the Asia side in five minutes, and look from here to Moun Sinai without having the view hampered by a tree.

I used to wonder how the children of Israel ever used up forty years getting from here to Palestine (you can do it in 18 hours by rail now), but when you look at the country they traveled over afoot, driving their she and cattle along, the wonder is they got there at all.

Or you can walk down street the other way till you come to the edge of the sandspit this town is built on and look off across Lake Menzaleh that is 2 feet deep and 40 miles wide and all covered with high-bowed, flat-bottomed boats with enormous triangular sails just like Cleopatra use to go about in. But outside of a date palm or two and a few ornamental acacialike shade trees imported from Australia, the timber wouldn't go mor than about 2 feet b.m. to the section.

All of which makes Egypt a good market for lumber. This district, that is, the Suez Canal Zone and the towns of Port Said, Port Tewfik, Port Fuad, Suez and Ismailia, absorbs about 3,000,000 feet a year. A lot of building is going on and, while the main materials used are stone, brick, cement and stucco, considerably more lumber enters into house construction here than in southern Europe, where even the scaffolding poles are whittled out of lava rock. This is the packing and transshipping point for the Palestine citrus crop and the supply point for shipping boxes for the Anglo-Persian gasoline refinery at Suez, so it has a large trade in box lumber.

The supply comes from Sweden (10%) and from Jugo-Slavia (90%) and awfully bum stuff it is. It looks like No. 3 common California white fir cut from second growth. But the Swedes can lay it down here for $54.00 per

FROM OUR OLD FRIEND DUBOIS (Cont.)

M and the Jugoslavs for $20.00 per M. A quotation was secured recently by a local firm on some California redwood reshipped out from England at $150.00 per M cif Port Said. They tell me at the hospital the inquirer is just coming to.

The reason for this town is the Suez Canal. An average of over 10 ships pass through every twenty-four hours. The town is inhabited by ship chandlers, shipping agents, marine engineers, Canal Company officials, pilots, consuls and Arabs. The Arabs are needed to coal ships. I suppose if a man watched the Canal for a year he would see a large proportion of the deep-sea shipping of the world. Now that the Trans-Siberian Railroad is on the fritz, the only connection between Europe and Asiatic ports is via the Canal. American shipping is well represented in the Canal traffic, five American lines regularly operating 45 cargo boats and oil tankers from Atlantic ports to Persia, India, Java, Borneo and the Philippines. Once in a while a Dollar Line hooker blows in from San Francisco, but they do not operate regularly and are usually tramping back via the Suez and Panama after having discharged a California cargo in China or Australia.

The possibilities of the Egyptian market for California products - lumber, canned goods and nuts - are excellent if you fellows could get the stuff here. It's a long ways though. We are 30 days steaming (at 10 knots) from Manila and 24 days from New York.

I have no desire whatever to fight a fire again, but an old saddle and a couple of head of pack stock would certainly look good. One hasn't time to be lonesome for anything, however, with ship agents routing you out at any hour of the 24 wanting a bill of health or trying to hand a destitute seaman on you in the middle of the night.--CduB.

FOREST PRODUCTS LABORATORY

Laboratory Represented at Famous Photographic Exhibition: A collection of photographs showing wood structure as it appears under a high-powered microscope is the contribution of the Laboratory at the sixty-seventh annual exhibition of the Royal Photographic Society held in London.

This exhibition includes the best representatives of photography, and selection is made from many thousands submitted. Of the 800 exhibits shown, the United States is represented by 60 exhibits sent by 20 different firms and individuals.

Laboratory Working on the Forest Sign Problem: Cloth signs, wooden signs, paper signs, have each had their day on National Forests - and we still have all kinds.

The Laboratory has entered the experimental field in sign material and a report has just been made on the durability of a paper known as "Napico," which shows that while there was some loss in strength after six months exposure and tests, this was not sufficient to reduce the effectiveness of the signs to any great extent.

Observations were made on (1) durability of the lithographing, (2) durability of paper, (3) wrinkling, and (4) holding power of tacks.

Durability was tested by alternately wetting and drying the signs, which probably produced conditions fully as severe as exist in use on the Forests.

Some fading took place in all colors; black seemed most permanent, then green and yellow, and the others blue, red, brown and orange faded considerably. Other results of the tests are given in the report, although complete data can not be expected until after the signs have been tested for a longer interval.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Can California Beat This? We believe the Routt Forest holds the record for long-distance effect of law enforcement policies vigorously prosecuted. We are frankly alarmed, however, over this sort of reaction, but probably it will not be experienced in very many places. The following is the incident:

DISTRICT 2 (Cont.)

Last year Forest officers on the Routt discovered a camp fire which had been left burning on Buffalo Pass. The guilty ones had departed, but by means of a little first class sleuthing telltale marks were discovered, and after rather an exhiliarating chase, the guilty individuals were caught, arrested and fined. This is Chapter I.

In Chapter II, some careless individual apparently sat down to smoke on the edge of an area of very bad slash on private land, and carelessly flipped his cigarette stub into the inflammable accumulation. Then he went blithely up the road, leaving large, masculine tracks in the dust. Soon an incipient forest fire was in progress, when along rode one of the natives who has heretofore been a good cooperator, and he observed the fire, but unfortunately also his eyes fell on the tracks going up the road. Instead of putting out the fire, which he could have done at that time, he rode 15 miles to report the fire to the Supervisor's office. When asked why he had not gotten busy on it, he said, "I could probably have put the fire out all right, but I seen those tracks going up the road, and after hearing how you fellows tracked those people last year, I was scared you would see my tracks and think I set the fire, and the first thing I know I would have had a fine to pay, so I didn't take no chances."

We ask again, can California beat this?

DISTRICT 3 - SOUTHWESTERN DISTRICT

Stock Improvement: The Tusayan maintains that in spite of hard times improvement in grade of stock goes steadily on. Any evidence? Yes, indeed! In the big 7th Annual Ram Sale recently held in Salt Lake, the Grand Canyon Sheep Co. of Williams bought 79 rams at an average price of over $97 each - one at $300. Also Colin Campbell of Ash Fork bought 25 rams at $80 per each.

Hardiest of White Pines: A man in Kansas, who has requested seeds of Pinus strobiformis (Mexican white pine) declares that species to be the hardiest of all the white pines and easily propagated in Kansas.

Getting Back: That our timber sale business is rapidly becoming normal is indicated by the fact that our net receipts for the quarter ending September 30 are approximately $62,000, almost half of the net receipts for the total fiscal year 1922.

Getting Them Quick: At 6 a. m. September 29, Mr. Horn of the Biological Survey, accompanied by Mr. Pearson, Silviculturist at Fort Valley Experiment Station, scattered poisoned oats on a planting area three miles south of Flagstaff. At 11 a. m. they returned and counted 33 dead prairie dogs above groun The bait was prepared according to a new formula. It has a great advantage over the old types in that it does not require "pre-baiting" with nonpoisoned grain.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Petition for Addition to Kaibab: The residents of southern Utah and northern Arizona, particularly those who are interested in the stock situation, have petitioned for an addition to the north end of the Kaibab National Forest of approximately twenty sections of land. Part of this area was at one time included within the Forest, but was eliminated.

Scouts Want Motion Pictures: Mr. Vern R. Ekins, Deputy Scout Commissioner of the eight troops in Weber Stake, and Scoutmaster Ben. M. Bingham of Troop 2, called in the office of Public Relations to make arrangements for motion picture reels for this fall and winter, to be shown to the scouts and other gatherings in the Weber Stake. Recently, Ernest L. Dee, a scout commissioner of Salt Lake, called and made similar arrangements for motion pictures and lantern slides.

Two Fires Started by Herders: On Monday of last week, at 12.30 p. m., a fire was reported to Mrs. E. E. Stock who, by 1.00 o'clock had an improvement crew on the way to the fire. This crew successfully put the fire under control in the afternoon. Ranger Stock and Supervisor R. D. Garver were on the north end of the district out of reach of a phone and but for this quick action the fire would have spread into heavy timber. Supervisor Garver and Ranger Stock reached the fire the next morning and put in the morning making it safe. They also followed some tracks from Hudson Ridge into the Flat Iron country where the fire was located. These tracks were ultimately connected up with Pickett's sheep herder. At first he said that he had not been in the country, but when it was shown conclusively that his tracks were there he admitted that he smoked cigarettes and was very careless in extinguishing them. He was taken before a Justice of the Peace at Oakley and received a fine of $25.00. The Forest Service recommended that the fine be remitted, however, because the herder's father had recently broken his leg and the family was in need of money.

Another fire was discovered on Ranger Smith's district, but was extinguished without a great deal of damage. A pair of shoes that fit the tracks that were found in the vicinity of the origin of the fire were found in Wards' herder's camp, but he declined to own the shoes, stating that they belonged to a former herder who left some two weeks ago. Ranger Smith is still gum-shoeing in the vicinity of Cache Peak.--Minidoka.

Payette Forest Mapped: Mr. M. S. Wright has returned to the District Office. He states that the survey of the Payette Forest has been completed during the last three months, comprising 832,000 acres, averaging about 7 mills an acre.

A new method has been adopted in this District of establishing three control points in every township. These points are perpetuated by a bronze tablet set in concrete, and the correct elevation above sea level is stamped thereon. These points are so located that they are intervisible, and any surveys in the future can be tied to these points very readily.

Mr. Wright's work consisted of horizontal and vertical control by triangulation. A new map should be available next spring for field use, Mr. Wright said.

DISTRICT 5 - CALIFORNIA DISTRICT

Stock Killed by Lightning: Edwin Simpson, one of the permittees of the Dinkey range, reports the loss of three of his best saddle horses at Cole Springs from lightning. One of them, an exceptionally fine horse, he had been offered $300 for. An accident of this kind illustrates vividly the danger of getting under a tree to keep dry during an electrical storm. Better get under a rock, or take a good soaking.

Tut, Tut!

Scene I. A plume of smoke. Shuteye Lookout in action per usual.

"Hello, Government Office. Smoke coming up at 295, just starting."

Scene II.

"Yes, Government Office, this is Camp Whiskers. Smoke? We-ll, we'll go out and see. Don't know of anything."

Later.

"Hello, Government Office. That smoke your Lookout saw was just smoke from our bath house. We just started up. Saturday night, y'know."

Still later.

"Hello, Government Office. We're worried a bit. We like privacy when we bathe. Any man that can see the smoke from a bath house that distance - say! Just for our comfort, have him close his eyes 30 minutes. That's all - just 30 minutes."

Another Cooperator: In traveling over some of the Forests recently, a good many signs were noticed advertising the products of the Shell Company of California. The fact that this was a violation of the State law and contrary to the Forest Service regulations was called to the attention of the company, and it has replied in part as follows:

"We certainly do want to work with you in every way in the beautifying of our forest roads in so far as keeping them from being littered up with advertising matter or anything that would deteriorate their appearance is concerned, and have issued such instructions as will prevent a recurrence of this incident."

DISTRICT 5 (Cont.)

"The Best Ever": The new F. S. exhibit for the various fairs has been constructed and will be shipped via truck to the State Fair this week. It is along entirely new and rather spectacular lines and shows a forest fire at night. The curved panoramic background was painted by Mr. MacKenzie, who has so successfully painted our previous backgrounds, and is a very effective piece of work. The exhibit is housed in a covered booth with a window-like opening in the front, and by means of electrical devices the glow of the fire and flickering flames are simulated. In the foreground is the figure of a Ranger, shovel in hand, watching a fire line.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Fairs: The Department's fairs exhibit has been shown at the following State and regional fairs this fall: Southwestern Washington, Chehalis, Wash.; Washington State, Yakima, Wash.; Oregon State, Salem, Ore.; Western Washington, Puyallup, Wash.; and it will appear at the International Livestock Show, Portland, in early November. In addition, Supervisors have put on Forest Service exhibits at five county fairs. Local representatives of the Forest Service, Roads and Biological Survey are in charge of this exhibit work. A very large amount of Forest Service "literature" was distributed at these fairs.

Oregon Caves: These caves located in southern Oregon, within the Siskiyou Forest, have proven popular for many years in spite of some 6 miles of steep mountain trails; in 1921 they were visited by some 1,100 persons. Last fall the Service and the B.P.R. completed a good auto road to the "Marble Halls," with the result that this year 10,000 persons have visited them, and they will probably become one of the major tourist attractions of the District. A complete recreational development plan has been worked out for the area which is a National Monument.

Popular Folder: The requests for copies of the new Columbia Forest folder map, "Information for Mountain Travelers," have been received at the District Office by the hundreds, in spite of the fact that it was received pretty late in the camping season.

Service Bulletin

U. S. FOREST SERVICE
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and
November 6, 1922.

PROGRESS AND STABILITY

By Leon C. Hurtt, D-1

Are the virtues of the above heading incompatible? Can the two ideas expressed be reconciled and hooked up together in work of the Forest Service?

A number of times during the past season and previous to that I have found myself up against the above questions and have spent some time cogitating and trying to arrive at a satisfactory conclusion. It ought not to be difficult to get a majority vote on the necessity for progress in Forest Service administration; nor is it. The Service is young and is still pioneering a comparatively new field. Naturally, most members of the organization are diligent at propounding new policies, testing out new theories and methods and searching new avenues to advance the cause. This is proper and right. The spirit of progress is commendable, has accomplished some worth-while things, and I should not care to discourage such a spirit.

There is, however, a rather distinct dividing line between mere change and progress. Many changes in present policies and procedures might be made without making any real progress. On the other hand, much progress might be made in forest administration without making material changes or without destroying what small measure of stability has been already achieved by the organization. Anyone who will look back ten, or even five, years and study carefully the many changes that have been made within the organization, some of which were probably not very well considered, will agree, I believe, that the crying need to-day is for stability fully as much as for progress. Certainly, stability is more necessary than change simply for the sake of variety.

Witness the continual change in, for instance, the small matter of forms that has caused endless confusion, the frequent shifting of administration boundaries in many cases only to be shifted again, changes in grazing division boundaries, unnecessary changes in protective and maximum limits that have given rise to uncertainty and disturbance in the stock industry, changes in the land classification policies that keep the administration unsettled, eliminations from and contraction of the forest boundary only to realize later the need for the lands excluded for forest purposes, constant changes in fiscal procedure, personnel shifts and changes in assignments that keep the force in an uncertain frame of mind and give rise to the oft repeated phrase "I am not responsible for that condition since I have only been in charge here six months, or a year, and have not had time to correct it, though I know it is wrong." Some changes in assignment are necessary, but could we not get along better with fewer rather than more, and would not more stability be thus achieved?

I question if any department is entirely free from a possible charge of excessive and often unnecessary changes without resulting in progress commensurate with the stability sacrificed. Perhaps this condition was necessary in the beginning when a big job of conservation had to be tackled without precedent for a guide. It seems to me that the time has come when stress should be laid on accomplishment and stability rather than on experimentation and continual change. Of course, I do not mean by this that the experiment stations should shut up shop. It is their job to experiment. Let us avoid, however, the attitude of mind that change for variety's sake is commendable and adopt more of the attitude that stability is the result to strive for rather than for each to consider himself as a committee of one to experiment and foster changes in all lines of work.

It is probable that I will be charged with excessive conservatism and that the above attitude will be considered as reactionary by some. I fully appreciate the need for consistent progress, but not for unnecessary or ill considered changes. I say, let's give change a holiday and give all an opportunity to catch up on the latest procedure and kill two birds with one stone by achieving progress and stability at the same time. Without much doubt, more real progress may be made by actually carrying out established and well-known policies and bringing administration up to present standards than in spending too much time looking for new worlds to conquer to the neglect of accomplishing worth-while things crying for attention in the bac yard.

Uncle Sam has in the main been kind, forbearing, rather indulgent, a very patient with his young nephew, the Forest Service. The lad has now about reached his majority and it seems entirely reasonable to believe the old gentleman would be considerably relieved and gratified if the youngster would settle down, quit cultivating too many advanced ideas and experiments, and strive for consistent progress with stability as a snubbing post.

STATE FORESTRY

By J. G. Peters, Washington

In response to an invitation sent by the Governor to a number of representative citizens of South Carolina, there was held on October 10 at the State House a meeting to consider the formulation of a forest policy for the State. About 40 attended, among them some of the most prominent citizens of the State. Altogether, it was one of the most effective and businesslike meetings of its kind I have attended. The Governor outlined the purpose of the meeting, and several responses were made, including talks from Mr. Scott and myself, in which were described briefly the economic situation in the State as to its timber supply and its dependence upon timber for future development, in addition to suggestions as to the remedial measures essenti to an adequate forest policy. A general discussion followed.

The concrete result of this meeting was a resolution recommending t the Governor appoint a forestry committee to consider the organization of a forestry association, and especially to draft a forestry bill for introduction in the coming session of the legislature. In accordance with the Governor's request, I left with him for the use of the committee he will appoint a statement suggesting the legislation which, in my opinion, it seems most desirable to present to the legislature at the present time, together with a draft of a bill embodying these suggestions.

Here, as in other Southern States, the real problem in the passage of forestry legislation lies in the very practical question of where the money for conducting the work authorized is to come from. All seem agreed that the legislature will not approve a direct appropriation for the purpose from the public treasury, and the feeling is general that forestry work will have to finance itself. Therefore, an extra tax or a change in the present method of taxation seems to be the only alternative. In my opinion, the most satisfactory solution would be for the State to adopt the Florida method of levying occupational license taxes on sawmills, turpentine stills, and all wood-using plants, and to create with the funds thus derived a special fund to be known as the State forestry fund.

At Atlanta I found, much to my regret, that the proposed forestry exhibit, as well as the "forestry day" at the Southeastern Fair, during the period October 12-21, had been called off, due to the unavoidable absence from the city of the Secretary of the Georgia Forestry Association, who had the details of arrangement in charge. After a consultation with officials of the association and Deputy Supervisor Shanklin of the Nantahala Forest, who had been detailed to take charge of the exhibit and had arrived in Atlanta, it was decided to have an exhibit after all, in view of the fine

STATE FORESTRY (Cont.)

opportunity it would offer for publicity in general and for advertising and increasing the membership of the Georgia Forestry Association in particular. With the material already on hand and that to be received from the Forest Service and other Southern States, including bromide enlargements, literature, and movies, the basis for a creditable exhibit was available. The idea of arranging for a "forestry day" was, however, abandoned.

On the 14th, I had an appointment at Montgomery with Conservation Commissioner I. T. Quinn. Mr. Quinn will shortly call a small meeting of lumbermen, turpentine operators, public officials, and others interested in forestry to consider the drafting of a bill for introduction in the coming session of the legislature, which will broaden his authority and provide for the establishment of a forestry division in his department. Again, the matter of finances is one of the chief problems. Mr. Quinn desires the assistance of the Forest Service at this meeting, and I told him that we would be glad to have a representative on hand.

HE SCREAMS

By Harriman, D-6

Why this quibble as to whether or not the mountain lion screams? He makes a noise that's a cinch, for I have stood within 20 feet of a good healthy specimen in captivity when he "put it across." You might as well say that a dog does not bark as to contend that the cougar is dumb.

Of course, as to what the sound should be called, there might reasonably be a difference of opinion, for the quality of the tone varies greatly with the distance from its source. If you are very near, say within 200 feet you will note a very catlike quality to the call and you would probably describe it as more of a squall than a scream. But if you are at some distance from the animal, perhaps half a mile or more, you miss the catlike quality altogether and you very likely would describe the call as a scream. Many have described it as being very like the high pitched call of a woman.

Squall or scream or catcall, as you will, but the mountain lion makes a noise, and a good healthy one too, such as would make Mr. Loring's red fox die of high blood pressure if he should attempt it.

If nearer than 200 feet to the source, say 50, one would probably describe it as a shriek - that is, if one were able to speak coherently after hearing it.--Ed.

EVAPORATION, MAXIMUM TEMPERATURE AND FIRE

By H. T. Gisborne, Priest River Experiment Station

Several recent news notes in the Service Bulletin indicate an interest in evaporation from Bates' evaporimeters as related to forest fires, and emphasize the coincidence of peaks of evaporation with peaks of fire danger. As the four main factors which influence evaporation from a saturated surface are: (1) temperature; (2) quantity of water vapor in the surrounding atmosphere; (3) renewal of the atmosphere, or wind, and (4) extent of the evaporating surface, it would be rather strange if peaks of fire danger did not occur simultaneously with high peaks of evaporation registered by evaporimeters. But evaporimeters are not the only instruments which register these peaks of danger.

A preliminary correlation of evaporation and maximum temperature, as compiled from a record of 86 days during June, July and August at the Priest River Experiment Station, shows that maximum temperature alone may prove to be a fairly accurate criterion of evaporation and perhaps just as good an index of fire danger for this locality. The following table illustrates the relation:

EVAPORATION, MAXIMUM TEMPERATURE AND FIRE (Cont.)

Maximum Temperature Degrees	Average Evaporation from two Bates' Evaporimeters Grams	Basis No. of Days	Average Evaporation Curved Grams	Range of Evaporation Curved Grams
66	2.5	2	2.5	--
68	4.5	1	3.9	--
70	4.0	1	5.2	--
72	7.0	4	6.5	3.5-- 9.0
74	7.7	5	7.6	4.6--10.3
76	8.8	2	8.5	5.5--11.3
78	8.8	5	9.4	6.3--12.2
80	9.5	8	10.2	7.0--13.0
82	11.8	10	11.0	7.7--13.8
84	12.2	9	11.7	8.4--14.6
86	12.4	9	12.4	9.1--15.3
88	12.5	11	13.0	9.7--15.9
90	13.4	8	13.6	10.3--16.5
92	14.0	6	14.1	10.9--17.0
94	14.4	3	14.6	11.4--17.4
96	16.6	2	15.0	11.8--17.8

The possible range of evaporation as shown above is an index of the weakness in estimating evaporation according to maximum temperature. But if the temperature were 96° F. and the evaporation 17.8 gms. for the day, would a going fire be handled any differently, would any more men be hired or fired, than if the temperature were 96° and the evaporation only 11.8 gms? It is not the exact amount of evaporation shown by the instrument which is of great est interest in our present knowledge of fire; it is the trend of the daily curve which indicates whether conditions are improving or becoming more dangerous, and maximum temperatures show this trend as well as evaporation records. Quantity evaporation from the saturated surface of an evaporimeter is not at all comparable to evaporation from forest duff or wood having a dry surface with a limited moisture supply beneath, so we can not claim that instrumental evaporation indicates the dryness of our fuels. Consequently a lack of a few evaporimeters need not hinder us greatly in comparing dangerous weather at various stations just so long as four stations can be equipped with maximum thermometers for the cost of only one evaporimeter.

WASHINGTON NOTES

Chief Engineer T. W. Norcross has returned to Washington from an 8 weeks' field trip in the West. In Montana, Oregon, and Utah inspection trips were made by auto, 3,000 miles being covered in this way. Operating cost in Oregon and Utah was less than 5.5 cents a mile. In Montana the cost was over 14 cents a mile, of which 9 cents was due to repairs and loss of time due to repairs. Special attention was given to studying the present and proposed road systems as outlined by the Districts, and Mr. Norcross feels that it was one of the most profitable trips he has ever made.

National Forest Receipts for the period July 1, 1922, to September 30, 1922, totaled $1,111,102.50, a decrease of $5,873.57 for the same period in 1921. Timber sales show an increase of $380,758.05, while grazing shows a decrease of $387,066.11. The decrease in grazing is probably due to the fact that part of the deferred grazing fees were included in the receipts given for the same period last year. The Branch of Grazing says there are just as many stock being grazed this year as before and the receipts will be about average when balances are paid. Districts 3, 5, 6 and 8 show increases ranging from $4,298.10 for D-8 to $132,782.48 for D-5. Districts 1, 2, 4, and 7 show decreases ranging from $6,850.25 in D-7 to $79,396.05 in D-4.

Mr. C. W. Boyce of Research has returned to the Washington office from a four months' trip in the New England States, where he has been collecting information on lumber and stumpage prices.

Public Relations would be glad to receive from the Districts and Supervisors' offices any extra copies of Department Bulletin 749, "Production of Goats on Far Western Ranges."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Tourist Business Increases in Western Colorado: The "Gunnison News-Champion" gives an interesting account of the September meeting of the Chamber of Commerce where a report of the tourist business of that section was discussed.

"A committee appointed by the Chamber of Commerce in August met with Arthur H. Carhart, Forest Service Recreational Engineer, and formulated plans for learning whether the tourists left enough money in Gunnison to make it worth while to develop the business. Accordingly, all business houses, professional men, hotels, garages, restaurants, etc., in the town of Gunnison were asked to keep a record of their tourist business during the week of August 27 to September 2. All agreed that this particular week, coming near the close of the summer, was far below the peak of the tourist business, and it seems conservative to estimate that the business for the tourist season would be at least ten times the amount of business for that week. Results of the week's check revealed an aggregate amount of $4,600. The committee conferred with the town marshal and county sheriff and were informed that there had been no trouble whatever with any tourist during the week, which leads to the conclusion that the tourists left a sizable pile of money and no trouble. Figuring on this basis, of $4,600 for the week's business, it seems conservative to state that the season's business amounted to over $46,000.

"A study of the principal attractions of the county seemed to indicate that the section should specialize on fishing as its main attraction to the tourists. Mr. Carhart is of the opinion that the natural advantages of Taylor Park, as a location for summer homes, is far superior to the famous Estes Park region.

"A committee is now engaged in an extensive survey of the fishing streams of the country. They plan to find out the mileage of fishing water, present availability of same, present conditions as regards number of fish in the streams, steps necessary toward keeping them stocked, retaining ponds etc. One important problem is that of opening up streams for fishing. Another survey is to be started soon to determine the number of fishing resorts, location, equipment, capacity and contemplated improvements to get an idea of the adequacy of present resorts to care for increased traffic."

The tourist business is now one of the major industries of this "cow country" and practically all of it is dependent on territory in the forest. That is, if you remove the forest territory, there is no tourist traffic.

Denver Office Spiritually Obligated: The following quotation is from a Ranger report in a grazing trespass case:

"As you no doubt know, the trespasser is a spiritualist and he says that he talks with the spirit of his dead father at 3 A.M. each day and that he advises him what to do for the ensuing 24 hours. His rider told me the other day that early this spring the trespasser told him one morning that the spirit of his father had told him to go ahead and use all the _______ range (the range trespassed upon) he wanted to and eventually he would be given that range by the Forest men in Denver."

Now this trespasser grazes some eight hundred or a thousand cattle. Presumably, this rather large number of cattle was accumulated under the direction of the spirits. How, then, can the District Office have any confidence in an earthborn decision which might deprive the trespasser of range his ethereal adviser has told him he would get?--L.H.Douglas.

Dear Doug: Can you not scrape up the spirit of some departed and dissenting Supervisor or Grazing Examiner, and through your control have the two spirits go into an ethereal clinch over the matter?

DISTRICT 2 (Cont.)

Frank H. Culley Visits the San Isabel: Mr. Frank H. Culley, head of landscape architecture at Ames, Iowa, who was on the San Isabel during 1920 helping with the recreational development there, spent several days in company with Supervisor Hamel recently. He had the pleasure of knowing that some of the opposition to the construction of the Cascade Trail had entirely passed, and that the trail is becoming more than locally famous for its beauty. Culley has the distinction of having the first course on recreational landscape design presented by American colleges. He has arranged it with the idea of training men to plan national, State, county and municipal rural parks and forests. His trip was partly in the interest of securing live and first-hand information for his students.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Keplinger Visits D-3: In preparation for a Ranger Study Course on Inspection methods to be given this winter, Peter J. Keplinger of D-2 is visiting the District office to inquire into developments on this subject during the past year. Keplinger's Ranger Study Courses have been the most successful of any similar attempts thus far made by the Service, and D-3 always welcomes an opportunity to exchange ideas with him.

Road Work Satisfactory: The road construction season is drawing to a close and it is gratifying to be able to report that our experiment of placing administrative men as superintendents of road construction has proven to be an entire success. Practically all of these men were inexperienced in road construction. They quickly grasped the situation and have executed the work at a lower cost than is being done by State and county agencies. One of the great advantages of having administrative men on road work is their value in fire protection. While an exceptionally good showing has been made this year, we expect even better results next year as a result of experience gained through this construction season.

Former Officer: Lee C. Daves, former Surveyor and Chief of Maps & Surveys in District 3, who left the Service in the early part of 1920 to accept a position with the Liberian Government, has just been heard from. He returned to the United States in August last year and is returning to Liberia the first of November. Daves is now in charge of the boundary surveys for the Liberian Government and is preparing a base map on a scale of 1 - 500,00 and atlas sheets on a scale of 1 - 200,000. The work is expected to take tw years more to complete. Daves states that he is preparing to determine longitude by wireless from the Arlington Observatory, which is 4,500 miles from Liberia. The longest determination heretofore made was between Washington and Paris, a distance of 3,840 miles. He states that the high cost of living doesn't bother them in Africa, as a cook can be obtained for $3.00 a month and they feed and clothe themselves. He says his salary check is practically all velvet, as clothes are not needed. Daves stopped a short while his way back to the United States in Germany. The most interesting observation he has to make of Germany is that Piper Heidsieck champagne costs abou 43¢ a quart in American money.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Lumber Business Good: Mr. R. H. Glover, salesman for Simonds saws with headquarters in San Francisco, called at this office yesterday and said that the lumber business, particularly of the Coast, is now in very good shape; that all of the large mills are running practically to full capacity and that his company is in some lines making as much material as at the high point during the war. In some lines they are unable to keep up with their orders and some of the factories are running over-time five nights a week.

A New Scenic Area has been opened up near Moroni on the Uinta Forest. This area has wonderful box canyons and natural bridges and real mountain scenery. People in the vicinity of Moroni are advocating the construction of a road into the canyon. Those who have visited this area claim that it has one of the largest natural bridges in Utah.

Mr. Seip Takes Indefinite Leave: Fiscal Agent H. A. Seip has found it necessary to take indefinite leave without pay on account of his health. He is now at home trying to recuperate, and if he recovers sufficiently he will probably go to California in the near future. The question of his ultimate return to the Service is doubtful.

Mr. Seip was transferred from the Navy Department to a position as clerk in the Forest Service, January 28, 1908. On October 13, 1918, he was appointed to the position of District Fiscal Agent, and was made Fiscal Agent October 1, 1920, which position he has since held.

More Fire Law Enforcement: Joseph T. Bryan, a herder employed by Benjamin Clegg, appeared before Justice of the Peace Brower, near Freedom, on August 5 and pleaded guilty to leaving a camp fire unextinguished. He was fined $10.00 and costs of $2.00.--Caribou Notes.

DISTRICT 5 - CALIFORNIA DISTRICT

Aerial Mail Service to Report Fires: The Aerial Mail Service operating between San Francisco and Reno reported to us that a couple of fires were burning near Nevada City and another about one hundred miles from San Francisco. Their pilots had seen other fires previously, but did not know to whom to report them, not realizing that some of the country covered by their route was National Forest area. That fact was ascertained quite accidentally. The Mail Service seemed most anxious to cooperate with us and an informal agreement has been entered into so that hereafter we will be informed of any fires which may be spotted. A daily flight is made from Reno to San Francisco, the planes arriving here at noon, so we will get up-to-date reports.

Some Tree: The following data concerning a large Douglas fir which was recently cut on Alder Creek, Sierra N. F., has been received from Jas. B. Ba Scaler.

The stump of this tree, 18 inches from the ground, measures inside bark 6 ft. 8 in. by 7 ft. 8 in., being slightly oval in shape. Measuring to include the bark, the largest diameter is 8 ft. 11 in. The rings number 4 This tree gave six 16-ft. logs and one 14-ft. log, scaling as follows: No. 16 ft. - 3500; No. 2 - 16 ft. - 2800; No. 3 - 16 ft. - 2440; No. 4 - 16 ft. 1800; No. 5 - 16 ft. - 1400; No. 6 - 16 ft. - 1070; No. 7 - 14 ft. - 530 - total 13,540. These logs were sound throughout, the only deductions made being due to breakage. The butt log was shot in the woods, as it was too l to be handled by the Carlson Company equipment and saws.

There were seven small 12-ft. logs bucked out of the large limbs of this tree, which I am sure is quite unusual. The tree itself was very bus the first and largest limb being only 20 ft. from the ground. The top was dead.--J.G.

A Visitor from Japan: On October 9, the office had a visit from Mr. Ryutaro Murakami, Secretary of the Department of Agriculture and Commerce, Tokio, Japan. Mr. Murakami is making a study of forestry in the United States and expects to visit several of the other Districts, as well as Washington, D.C.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Bear Valley Unit Advertised: The advertisement of the Bear Valley unit on Malheur Forest, containing 890 million feet of timber, has begun. It is bei published in a large number of trade journals throughout the country and newspapers in the Northwest. One thousand copies of a 22-page prospectus have been rushed through the Government Printing Office, and a very extensive d tribution of them to the lumber companies throughout the country is being made. The advertisement runs until February 15, 1923. Considerable publi is resulting.

How About Rubber Boots for Lookouts? Rice N. Anderson, primary lookout at Anvil Rock on Mt. Rainier, had a shocking experience recently. He had just taken up the telephone after a lightning storm, when one last bolt struck the line and came ambling in without waiting to be asked. Mr. Anderson was unconscious for an hour, but fortunately had visitors at the time who rendered first aid. According to reports to the Tacoma office, the experience, though painful, was not serious.--G.E.G.

"Red Enemy."--Messrs. F. W. Perkins and E. E. Tucker of the Department's Motion Picture Laboratory, recently spent two weeks in D-6 filming a fire story. The scenario has several thrills and represents something new in Department reels. There were shots from an airplane and a 11,000 ft. peak, settlers and campers being driven into a creek by raging forest fires, logging, sawmill and paper-mill scenes, "human interest" touches, scenic stuff, a large cast, etc. It was made possible by the hearty and very generous financial cooperation of the Western Forestry and Conservation Association, represented by Mr. C. S. Chapman. The film should be ready for release this winter.

In Tune: The Portland Oregonian, perhaps the leading paper of the Pacific Coast, has in times past been rather a consistent critic of conservation, Gifford Pinchot, and Alaskan affairs. The following extract from an editorial of August 23 is therefore of special interest:

> "The forest wealth of America is centered in Oregon. We, too, must resolve without delay to stop burning up our growing timber - must enforce our laws by drastic penalties, if need be. Else in the comparatively near future upon steep hillsides we shall be laboriously setting out seedling pines and firs, as they do in Japan - in the hope of a crop that will require a lifetime to grow."

QUAIL AND SURFACE FIRES

By Smith Riley, Washington

Growth furnishing cover and feed may be destroyed by fire. If such fires occur in the late summer and fall or early winter, areas burned over would be rendered uninhabitable by these birds, which would seek habitation on adjoining lands not burned. When the season's growth had reclothed these burns and feed was available the birds might return. In regard to nesting we want to know whether the birds seek the season's growth for nest shelter or the accumulated growth of previous years. If the latter is the case, the birds would not frequent a burned area until one or more year's growth had accumulated. Fires occurring during the nesting period or just after would be injurious. However, fires at this time are unusual in the South and East, though they may occur in the Southwest. If we are to gain the interest and support of the sportsmen in fire prevention there must be information available on such points.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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A MESSAGE

Concerning the intimation in a recent newspaper dispatch from Washington that some agreement had been reached between the Secretary of the Interior and the Secretary of Agriculture with reference to the transfer of the Forest Service, Secretary Wallace said the other day that he had heard nothing of any such conference and agreement, and that so far as he knew there were no recent developments in this matter. He added that last summer the President had said to him that he would keep his mind open on this whole matter of reorganization of government departments until he had conferred with the heads of the various Departments and had gone into the matter fully. There has been no such conference concerning the Forest Service.

OUR FOREST PROBLEM

The following extracts are from a speech made by Secretary Wallace before the City Club of Cincinnati, Ohio:

"Timber is a crop - one of our most important crops. It grows, ripens, and becomes ready for the harvest, just as other agricultural crops. It should be harvested in season and another crop grown for the use of future generations. It must be protected from fires, from plant diseases, from insect pests, just as other agricultural crops are protected. That requires the services of the horticulturist, of the entomologist, of the plant pathologist, and of the forest specialist, all of these men being specially trained in their own lines, working together in the closest cooperation.

"For many years our forests were treated as if they belonged only to the present generation. They were cut without regard to future needs, but for the personal profit of those individuals who managed to get hold of them. Now we have come to see that the conservation and regrowth of our forests is one of the greatest of our national problems, and this whether the forests belong to the government or to the individual.

"The government forests comprise some 156,000,000 acres. Some people seem to have the notion that these forests should be administered simply on the theory of disposing of the timber after the manner in which private forests have been administered. The Department of Agriculture looks upon the matter very differently. Our notion is that ripe timber should be harvested as it is needed, but in such a way that other trees will grow to be harvested in the future. We protect the forests from fire. We regulate the cutting in such a way as to insure new growth. We replant. We are trying to increase the value of the grazing land within the forest areas. Our entomologists protect the trees from insect pests, some of which are very serious. Our plant pathologists show us how to prevent and eradicate tree diseases. Our agrostologists study the grasses and forage plants and show us how to grow better. Our stockmen work with the forest rangers in administering and improving the grazing land. We have a Forest Products Laboratory, at which we study the various uses of timber, how to conserve its use in commerce and industry, and how to use timber which has heretofore been regarded as practically worthless. We are establishing forest experiment stations in different forest areas, at which the various problems of conservation, growth, protection and utilization are being studied by highly specialized men.

"While the administration of the forests is under what we call the Forest Service, it is assisted by no less than eight other bureaus in the Department of Agriculture: the Bureaus of Plant Industry, of Animal Industry, of Public Roads, of Soils, of Entomology, the Weather Bureau, which is most helpful in fire control, the Biological Survey, which aids in destroying predatory animals within the forests, and the Extension Service, which teaches and administers better forestry methods on 200,000,000 acres of farm woodlots.

"The relations between the Department of Agriculture, through its Forest Service, and the owners of private timberlands are most harmonious. More and more of the private owners are coming to see that they need the sort of scientific help which the Department can furnish. More and more of them are adopting the Department's policies of fire protection, insect and disease control, and cutting in such a way as to provide for renewed growth.

"The protection, conservation and growth of our forests is one of the greatest of our agricultural problems."

THE WHY OF "LUMBER"

By Charles W. Boyce, Washington

The term "lumber" as applied to sawn wood goods in the United States and Canada originated in Boston shortly after its settlement in the early part of the seventeenth century. The Colonists thereabouts worked up a trade in oak pipe staves with Spain. Small quantities of staves were brought in and deposited in piles about the vicinity of the wharves on lower State Street until enough were gathered to make a cargo. The varying-size piles scattered here and there littered up, as the English say "lumbered up," the district. Because of this fact sawn wood goods became known as lumber. The first official use of the term as we now understand it occurred in a police order in 1663, which read in part as given in Defenbaugh's History of the Lumber Industry of America, "to cleare the ends of all streets and wharfes that butt upon the watter from all lumber and other goods."

GOOD WILL AND DOUGHNUTS

The following is quoted from a letter received by Supervisor Wright from W. W. Seymour, ex-mayor of Tacoma and prominent member of the Mountaineers, who made a trip through the Rainier and Columbia last August:

"I wish at this time to commend your fine services to the Mountaineers, especially the lookouts upon Mt. Adams and Mt. St. Helens. The latter, whom I consider one of Nature's noblemen, was certainly one of the most courteous men it has been my pleasure to meet for many a day."

I do not know all of the things done for the comfort of the Mountaineers by the Forest officers whom they met, but I did learn of one thing done by George Snitzler, lookout on Mt. St. Helens, which must have won their hearts. When the Mountaineers, 97 strong, arrived at Spirit Lake, it was raining, and as George could see nothing, he had come down for supplies. The next morning at five o'clock he set out for his station, and when the mountain climbers reached the top he had a cup of hot tea and two doughnuts for everyone in the party. I am told they were very good doughnuts, too. When one considers that this man must pack his

GOOD WILL AND DOUGHNUTS (Cont.)

supplies and fuel oil on his back from the lake to the top of the mountain over a dangerous route, and that he knew he was not expected to provide refreshment for a crowd of strangers, is it any wonder that Mr. Seymour calls him "one of Nature's noblemen?" It is such thoughtful, free-hearted service as this that raises the individual above the common and wins friends not only for himself, but for the organization to which he belongs. Such service, to my mind, always has been and always will be one of the most important factors in solving our Public Relations problems.--H.M.W.

WASHINGTON NOTES

Paul D. Kelleter gave a talk on Forestry to 3,000 "Devil Dogs" at their camp in Quantico, Virginia.

Announcement is made by the national headquarters of the Veterans of Foreign Wars of the United States in New York City that Capt. Robert B. Handy, Jr., of this city, has been appointed inspector general of the organization. This appointment carries with it membership in the National Council of Administration.

Capt. Handy was one of our first messenger boys.

District Forester Port of the Pennsylvania Department of Forestry proposes to use public camp grounds as a means to further educational work in forestry. He will make a fire line around the camp ground site. The fire line will be posted with information to the public concerning its purpose and the action to be taken in case a fire occurs on the site. Trees of each species on the site will be labeled in order that they may be identified by visitors.

FOREST PRODUCTS LABORATORY

A Modest Inventor Writes to Us: "I am an inventor, having given the subject of conservation my best thought. . . .

"My system of sawing has been reported on favorable at the request of the Department of Commerce. . . .

. . . . "If my system was universally used by all the sawmills in the United States, the saving would amount to 5 times the amount saved by the Forest Service in protecting the forest from fires. When the log leaves the protection of the government the sawmill operator burns up 5 times the amount of lumber in his burner as is burned up in the forest. The log is sold at the small end regardless of what the butt of the log measures. . . .

. . . . "My system will permit of a saving of 60 per cent of the waste now going away to the burner. . . .

"Kindly see that my patent does the public what is possible.

"I am to engage myself at -----, ----. My address for the present will be General Delivery, where I propose to engage in the Architect profession. . . ."

Life in India: Out two days by train from Bombay, India, is a wood distillation plant which W. E. Clifford, known to some in the Lab., is now erecting. That he is really out in the wilds is shown by an excerpt from his letter. "We are located in the jungle. The nearest city, Bangalore, is about 150 miles which is just a night's journey for the trains here in this particular spot. At the present time we are the only two white families in a population of nine thousand, and our nearest white neighbors are about twelve miles distant. We have plenty of visitors in the way of panthers and tigers the former coming right into the compound of our bungalow. There is plenty of sport in the way of shooting."

FOREST PRODUCTS LABORATORY (Cont.)

What Part of a Tree is Water? The moisture in different green trees or in different parts of the tree may vary considerably, but as a general average 40 to 60 per cent of the weight of the wood in the tree may be water. The rest of the wood, that is the wood fiber itself, will commonly contain about 50 per cent carbon, so that of the original wood 50 per cent is water, 25 per cent is carbon, and the other 25 per cent of the tree consists mostly of hydrogen and oxygen in chemical combination with the carbon.

DISTRICT 1 - NORTHERN DISTRICT

A Vote of Confidence: At a recent business meeting of a Northern Idaho timber protective association, discussion of the slash disposal problem in that region was given a large place in the program.

A prominent member of the association made a particularly strong appeal for piling and burning slash, using as the basis of his discussion the success of piling and burning slash as practiced by the Forest Service under the cooperative section in Timber Sale Agreements, in which his company is a party. This lumberman stated that he believes that piling and burning of slashings is coming in Idaho, either as a voluntary practice adopted by the operators, or through legislation which will force it upon them.

One owner who held valuable white pine holdings which are listed with the association has approached Forest officers with the proposal that he desires to withdraw his holdings from the association and list them with the Forest Service.--H.R.F.

This Week was fire protection week for the Rotary Club and the Kiwanis Club in Missoula. Both clubs showed a very keen interest in forest fire protection and asked the Forest Service to deliver addresses showing the importance of proper protection of our Forests. It is believed that considerable progress is being made among the various organizations in this region on this most important phase of forestry.

"Thank You, Judge!" Following is Judge McNaughton's statement in pronouncing sentence in a District Court in Idaho:

"I can not accord with the views expressed in using leniency in this case. The people of North Idaho live in constant great hazard from fires which frequently destroy valuable timber, sometimes resulting in loss of life. Our laws are quite lenient enough in permitting camp fires in forest regions at all during the dry months, and it is not asking too much to require campers to extinguish them before leaving camps. It will not do to say that no harm was done because the fire did not spread. We can not afford to wait till fire spreads and forests and homes are destroyed or endangered and then punish the offenders; for the purpose of the law is prevention; it is to lessen the danger by requiring all campers, at all times, to extinguish the camp fire before leaving it.

It is the judgment of the court that the defendant is guilty, as has been found by the jury; and it is the sentence of the court that you pay a fine of $50.00 and costs."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Municipal Recreation: A municipal recreation area has just been set apart for the city of Fort Collins by the Forest Service on the Upper Poudre River, embracing 40 acres. While this still remains a part of the Colorado National Forest, it is reserved and dedicated to the purposes of a recreation area for the city, upon which will be placed improvements costing in the neighborhood of $36,000. It is the plan of Fort Collins to develop this into an ideal mountain playground.

A large shelter cabin is already constructed and cottages and cabins are planned for those who desire to use the area periodically. A large community house will be built which will serve as an assembly hall with rest rooms included. An outdoor theater is planned on a very appropriate natural location. Provision will also be made for tent cottages for visitors who expect to remain for only very short periods.

DISTRICT 2 (Cont.)

Big Timber Sale on Medicine Bow: Block 2 of the Lake Creek Unit on the Medicine Bow Forest, including approximately 333,600 hewed railroad ties, 3,360,000 feet of sawlogs and 5,700,000 feet of mine prop material, has recently been sold to the Otto Lumber Company at the following rates: 13¢ each for hewed railroad ties, 50¢ per M for sawlogs and 35¢ per cwt. linear feet for the mine prop material.

Mr. Smith Riley spent a few days in the District office this week incidental to his work of inspecting the Federal game and bird refuges of the West, of which he is now in charge.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Are They Interested in Grasses? Who, people in general? They certainly are. Supervisor Wales made a collection of native grasses and browses for the Forest Service section at the Prescott Fair. The specimens were mounted on two panels four by eight feet and carefully identified by cards that gave common and scientific names and range values. The collection was pretty to look at and in addition it achieved its end. Persons of every class and age from students in school to old men on canes hung about, studied the specimens and asked questions. As an arouser of interest, it was a winner. Conversations once started led on to whatever topics the Supervisor wished to emphasize.

Public School Fire Posters: Ten striking fire prevention and forest protection posters made by pupils of the seventh grade of the Prescott, Arizona, public schools were on exhibition at the Northern Arizona State Fair. They were well placed in a booth of the Educational Department directly opposite the Forest Service section of the Department of Agriculture exhibit. Conversations with teachers indicated that these products are direct results of an incessant campaign in the schools for forest protection by Supervisor Wales and the members of his staff.

Winter Feed and Range: Owing to the severe drouth in New Mexico this year, there are thousands of head of cattle and sheep on National Forest and other ranges that are facing starvation unless moved to points where feed or range can be had. The D-3 office of Grazing, with splendid assistance rendered by the Bureau of Markets and Forest officers in other Districts, has gathered a lot of information concerning places where winter feed and range are available with prices that are being asked therefor which has been given to the stockmen.

Another Definition of Drouth Herd: "A bunch of cows that run out uv grass an there wan't no rain to make nun." Editor's note--This came from Ambrosia Creek, Texas, and is considered to be more explicit than the definition given in a recent Daily Bulletin.--Lincoln.

Forest Literati: The Official Record gives a list of twelve Department of Agriculture workers from whose pens have appeared articles in recent current publications. Six of these are Forest Service people. Why not? Forestry is a whale of a subject and there's a lot to be said about it.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

The Disappearance of Game on the Wyoming: Eight years ago, when I spent several weeks on the Wyoming Forest, elk signs on the Greys River watershed were very abundant, and it was not difficult to see elk occasionally. During my recent trip over the Forest, fresh elk signs were seldom observed on Greys River and no elk whatever were seen. It is quite apparent to me that the number of elk on the Wyoming Forest has greatly decreased in the past eight years. It is impossible to say whether the elk have been killed or died off, or whether they have gone north in the Jackson Hole herd.--C.N.W.

Switzerland's Common Sense: Switzerland to-day reaps the benefits of her wise policy of forestry pursued for hundreds of years. Out of every 100 square miles of territory, 17 are covered with forests. The municipal forest of Zurich, famous throughout the world, has been producing timber continuously during the last 600 years. Crop after crop has been grown and marketed and new crops started. It is a common saying in Europe that "Switzerland holds her mountains up and her taxes down" with her forests. These forests, largely municipal, protect farms and towns by preventing landslides. In addition, they pay dividends which materially reduce tax levies. Moreover, it is her forests, as well as her mountains, which make the men of Switzerland strong and self-reliant. It is her forests, too, which help to attract and charm tourists.--Canadian Forestry Magazine.

The Salt Lake Fair: F. S. Baker returned from Salt Lake, where he has been attending the State Fair. He states that the fair at Salt Lake was by far the best attended of the three State fairs in this District. The Forest Service exhibit was well received and the part of the exhibit that actually ran, such as the sawmill and the fire model, worked very much better than they did at the other fairs, and consequently were more effective.

From our experience of fairs this year, Mr. Baker said, we feel that in order to make our exhibit serve its highest usefulness, it will be advisable to inject more local color into it.

DISTRICT 5 - CALIFORNIA DISTRICT

Teaching the Young Idea: "This is the time of year in Raratonga, an island nine days' voyage east of New Zealand, when the island government makes its annual inspection and fines those who have not complied with the island law, which provides that the head of each family shall plant and cultivate a cocoanut tree for each year of a child's age until he is old enough to plant them himself."

America would have no need to worry about a future timber supply if there were such a law in this country.

Next! The Inyo boasts of having the steepest and roughest road in California that is regularly traveled. It is so steep that only horse-drawn vehicles can operate over the road, since grades run up to nearly 40 per cent with sandy traction. The fat lady cook at Rock Creek Lakes Resort, in describing her trip in by stage, said that it was raining hard when they were going up Sand Canon, and that although the top was up and side curtains on, the road was so steep that it rained right in the front of the stage and out the back and so the curtains did no good.

Fire Protection by the Forest Service is highly valued by Miss Frances Ruppert, who lives by herself on Ruppert Ridge in the south end of the Forest. Miss Ruppert recently advised Supervisor Coffman that she had worked cutting wood in order to raise the money for her cooperative protection deposit. Cooperation such as that should surely put us on our mettle to make good in delivering the most efficient protection possible.

Balloon Did It: The McCloud Sunday School had a rally Sunday, September 24, to raise money for the heathen. A paper balloon in the shape of a white elephant was sent up for the amusement of the children and grown-ups. The elephant got mixed up in its bearings, hit a snag on the outskirts of town and landed in a mass of slash, starting a conflagration. The Forest Service was appealed to for help. By closing down the mill and using 114 men, the fire was held to 400 acres. The money raised for the heathen was not sufficient to foot the bill for the fire. The remnants of the balloon were found in the south end of the fire in the town limits, thus passing the cost of the fire over to the McCloud River Lumber Company.

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Forest Assistant: Can you write your name with your eyes shut?
Supervisor: Sure.
Forest Assistant: Well, shut your eyes and sign this timber appraisal.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Forest Exhibits: At a fair and stock sale held at Tonasket in the Chelan country, Ranger Price and Supervisor Mitchell made camp in the exhibit tent and preached the gospel of fire prevention to some seven hundred persons. Fir trees were set in the ground, a tent pitched, a camp fireplace built, and principal fire-fighting equipment displayed. People seemed very much interested in the fire finder, Hauck torch, nesting mess outfits, and three-day rations.

Ranger Pierpont and Supervisor Mitchell put up a similar camp at the Omak Fair. While the preparations were more elaborate, the number of people reached was smaller on account of being located in an exhibit tent where a charge was made for admittance. The second day Mr. Mitchell persuaded the management to open the tent during the day for free admittance. The number of people reached was estimated at 300. During the entire fair at Omak a number of good fire slogan slides were shown at the movie theater.

Tables Tilted: Has anyone discovered that the salary tables on page 67 of the Fiscal Regulations are a trifle out of kelter? The copy we are using has the dates dropped down just one day. The Fiscal Agent caught us trying to pay one of our temporary employees $1.50 more than he had coming. We were positive that we had checked the pay roll against the salary tables, so we investigated. We didn't attempt to convince DA that the salary tables were to blame for the error, but we take this means of calling the attention of all poor overworked clerks to this pitfall awaiting the unwary.--E.V.C.

It's Great to be Crazy: D. H. Norton, of Russian Charley Bar on Rogue River, proudly admitted having set two fires during the present season. He claimed that he owned all the land between Howard Creek and Peavine Mountain, 100,000 sheep, 100,000 cattle, and 100 horses; he modestly but firmly insisted that all his land should be burned off to make range for his stock. He also mentioned his plan to build a road from Galice to Gold Beach and establish a mail route on it - hence the 100 horses, but at this point the County Court intervened and sent him to the Skookum House at Salem, so we didn't get a chance to start our prosecution for burning without a permit. Something is always happening to keep down our score for convictions.--E.H.McD.

DISTRICT 8 - ALASKA DISTRICT

A New Enemy to telephone lines has been found on the Chugach National Forest, Alaska, - none other than the industrious beaver. Several poles on a commercial telephone line crossing the Copper River flats, where there are numerous waterways, have been cut down by these animals. The resourceful line man now protects poles set near waterways by wrapping them with wire to a height of several feet.

Forest Examiner Wellman Holbrook has just completed the field work necessary for the extensive land classification of the Tongass National Forest. His field camp consists of a fifty foot gas boat, and his crew of a cook and gas boat pilot. With this outfit Holbrook moved from point to point along the shores of the island in southeastern Alaska, landing in a skiff. Two years ago while on one of his solitary shore excursions, he stepped in a large bear trap and snapped it over his hand while he was extricating his foot. After much difficulty he reached the beach with the trap and its toggle, extricated himself and rowed back to the launch. This year's work passed without incidents of this kind, Holbrook reporting the best season he has experienced in Alaska.

Ninety-seven Islands within the Tongass and twenty-six on the Chugach National Forest are now leased for fox farming purposes. Blue foxes are liberated on the islands, keepers feed them, guard against poachers and capture them at pelting time. The foxes so far have done well, growers claiming a normal increase of from four to five young annually per pair of adults. They grow to salable age in one year and pelts are now worth about $125 each. The industry, which has nearly all developed within the last two or three years, has now taken up practically all suitable islands. Applicants for islands far outnumber the supply.

Louis King, who has been Fiscal Agent in Alaska since 1919, left on October twenty-first for Denver, where he will be Auditor in the District office. Harold L. Redlingschafer is on the job as his successor. A farewell party attended by all the Bureau of Public Roads and Forest Service contingent, was held for Mr. King and his family at the home of Mrs. Wellman Holbrook. Both Mr. and Mrs. King were presented with gifts as remembrances from their office associates.

A BOUQUET FROM MR. FORDYCE

(Mr. Fordyce is Editor of the Motor Camping Department of the "National Sportsman").

"You certainly have an admirable type of men in the Forest Service and I was glad to get acquainted with some of them. I am pretty well acquainted with the National Parks and the men in the National Park Service and hence you will note the preponderance of articles on the National Parks which I have produced, but my eyes are open to the recreational uses of the National Forests and I will promote their uses as much as I can. For myself, I prefer an outing in a Forest rather than a Park, for the wilderness appeals to me.

"Any data which you may have on the recreational uses of the Forests I would be glad to get. You sent me last year a number of booklets, but you may have put out something since that. I am especially interested in the elk. Mr. Raphael of the Ogden office told me of the fire prevention in the Forests and I will devote one article to that subject, for I can reach a large number of people through the outdoor publications."

"No human being has ever lived without wood. So far as we can see, no human being ever will. Even the Eskimo in the frozen North, where no trees grow, must have wood. It is an absolute necessity. Human life began in the forest, and if the forest disappears, with it human life will end.

Service Bulletin

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THE TEN AMENDMENTS

By "Daytonius," Washington

We read that, when gladiators of old met to make a Roman holiday, if one of the combatants showed the saffron streak (for which, under the circumstances, one now can hardly blame him), the decadent rabble in the Coliseum bleachers "would throw their sweaty caps in air" and holler as one man: "*Recipe ferrum!*," which, being interpreted in the vernacular of 20th century United Statesese, may freely be rendered: "Give him the hook!"

To-day the dolichocephalic savants of nomenclature in B.P.I. meet, and, after sundry pawings of their "beavers" and experiencing prolonged hectic pulsations of gray matter within their several pia maters, ejaculate as one man: "*Recipe ferrum!*" to all repetitive binomials. Headsmen, bring forth the axe and smite the stuttering culprits' necks!

Getting down to brass tacks! The Bureau of Plant Industry has decreed that duplicate binomial names shall henceforth be taboo so far as that Bureau is concerned, *i. e.*, that, in cases where the oldest specific name is identical with the generic name then *the next oldest specific name* shall be taken up for the plant in question. Such tautological names have long been an eyesore to persons of discrimination and taste who have endured them under sufferance; the late lamented Dr. Edward L. Greene styled these binomials "cat-cat, dog-dog" names, and the facetious refer to them as the "Rochester twins," since their use is brought about by the American ("Rochester") Code of nomenclature.

This decision on the part of the Bureau of Plant Industry authorities is really an epochal one, since it marks the very first departure from the strict priority rule of the American Code of nomenclature to the more elastic International ("Vienna") Code with its lists of "*nomina conservanda*" (names to be used regardless of priority). In other words, a precedent has been established for departures from strict priority and a rapprochement to international nomenclature inaugurated. Uncle Sam may pursue politically a policy of "splendid isolation," but botanically he is now coquetting with an overseas Flora.

The following 10 repetitive, or duplicating, plant names (column 1) should henceforth disappear from Forest Service *range plant* records in favor of the next oldest and nonduplicating names (column 2):

Duplicating name (to be discarded)	Latin name henceforth to be used	English name	Districts where so far collected
Aruncus aruncus (L.) Karst.	*Aruncus sylvester* Kostel.	Goat's-beard	5, 6
Corallorrhiza corallorrhiza (L.) Karst.	*Corallorrhiza trifida* Chatelain	Early, or Trifid, coral-root	2, 4
Eruca eruca (L.) Britt.	*Eruca sativa* Miller	Garden rocket	3
Lappula lappula (L.) Karst.	*Lappula echinata* Gilib.	European stickseed	2
Linaria linaria (L.) Karst.	*Linaria vulgaris* Hill	Butter-and-eggs	1, 2

Duplicating name (to be discarded)	Latin name henceforth to be used	English name	Districts where so far collected
Mariana mariana (L.) Hill	_Mariana lactea_ Hill	Milk, or Mary's, thistle	6
Persicaria persicaria (L.) Small	_Persicaria mitis_ Gilib.	Lady's-thumb; pinkweed	2, 3, 4
*_Sassafras sassafras_ (L.) Karst.	_Sassafras variifolium_ (Salisb.) Kuntze	Sassafras	7
Sophia sophia (L.) Britt.	_Sophia parviflora_ (Lam.) Tidestr.	Tansy mustard	2, 4
Vaccaria vaccaria (L.) Britt.	_Vaccaria vulgaris_ Host.	Cow herd, or cockle	1, 2, 4, 6

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* This is the Forest Service check-list name for sassafras, but, for the sake of uniform usage, it should give way to a nonduplicating name.

The zoologists still prefer to lead the double life by traveling the primrose path of dalliance with their adored duplications. The antelope they call _Antilocapra americana americana_; the ruby-crowned kinglet, _Regulus calendula calendula_, and so on. Doubtless they will persist in perpetuating these monstrosities till some nomenclatorial Billy Sunday appears and snatches them as brands from the burning.

ADEQUATE RECORDS AND ADMINISTRATIVE CONTROL

By E. W. Tinker, D-2

Are our records adequate and in proper form to give the best and most efficient administrative control? In the Rangers' and Supervisors' offices, at least, I would say there is unlimited room for improvement. I believe we are stumbling along trying to fit an archaic system, distinguished by its cumbersomeness and duplication, to modern needs.

That the records of the Rangers and Supervisors are not only inadequate but unwieldy, in spite of the pages of typewritten material gotten out annually, becomes obvious if an attempt is made to determine the status of the work on a Forest or Ranger District from them. Let us look at it as it is right on the ground, from an unbiased standpoint.

The Ranger is making up a schedule for a field trip. Say he has to go to the Rock Creek grazing division to see if a reported cattle trespass is true. He figures he will follow one route going and another route coming. Now what work should be accomplished on the trip? Where has he a record of the status of this work? He has four fire tool boxes on the route; this he can determine by looking on his fire map. Now perhaps by looking back over two or three months diary record he can determine that box No. 1 needs coal oil, box No. 2 seals and some grease, and so on, providing his diary is kept in sufficient detail. There are several special use permits en route to inspect. Perhaps he knows his district so well he can list them on his schedule, or he can go over his files and look over all his uses to be sure he doesn't miss any. Now on his last trip he found certain things lacking which needed action by the permittee. What were they? He certainly needs to follow up his request to the permittees that corrective action be taken. He may be able to dig this out of his diary or he may not. The inspection of a special use permit calls for attention to certain details. The Supervisor has an inspection outline to be sure he doesn't miss any, but the Ranger just looks it over without a guide, and, if he is the right sort, makes a few notes for future reference. He will cover certain grazing divisions and certain roads and trails. Where were the fire and direction signs needed which he thought should be up when he was there last? The making of a complete schedule which will insure the accomplishment of all the work possible on a certain trip is, to say the least, attended by serious handicaps because of lack of adequate and systematized records.

The Supervisor plans a trip with the Ranger. A schedule for the trip is worked up similar to that of the Ranger and attended by the same difficulties. The Supervisor inspects a special use permit. Certain things are amiss and are called to the attention of the Ranger. A fire tool box is not satisfactory and so on. Conditions are either satisfactory or unsatisfactory, but because the Ranger has nothing definite to go by when he does his work, the Supervisor's inspection is not tied in.

Now supposing the Ranger had a record of what he saw and did on each trip in concrete form. Take the fire tool box. If he had had a definite and accessible record of his last inspection showing tools sharp, painted, branded, seals present, etc., he would have been able to have made his schedule much easier, and if the Supervisor opened the box and found conditions were not as stated in the Ranger's record, there would be a definite point to settle. If the Ranger had a complete record of his inspection of each grazing division answering definite questions, how much more effective would the Supervisor's inspection be. The Ranger says the salt is properly distributed in his inspection record. The Supervisor differs when he sees it and the problem is settled on the ground. How much more effective than the general conversations we have indulged in in the past, in which the Ranger does not commit himself, but using diplomacy generally agrees with the Supervisor's comments. With such a record, could we not judge the whole by the part, and possibly cut down the amount of inspections necessary?

Definitely the following plan is suggested, and I know, having used it, that it is practical mechanically, and a most effective means of administrative control.

Let each line of work be taken up separately. For each activity make up a set of questions covering the quality of inspection. Then make a form providing space for the answers, largely yes or no for each unit of work; i. e., each grazing division would be listed with its questions and places for the answers. Similarly, each telephone line, timber sale, etc. Make these forms to fit the Ranger's field notebook. At the beginning of the year let him fill in the name of his grazing divisions, special uses, etc., the record of the inspection to be entered later on the ground.

A complete record of the status of all the work on the Ranger District should result in an accessible, tabulated form. Also, there is available on the forms a list of all current work. If the inspection questions are well thought out, why should not these data compiled in the Supervisor's office suffice for the preparation of all reports without further reference to the Ranger? Would not the record of conditions made on the ground, say twice a year, form a much more satisfactory basis for an intelligent grazing analysis than our past procedure of generalization and long reports? Why not make the record of inspections, such as telephone lines, trails, uses, timber sales, etc., serve as a basis for the Rangers' current reports? If desired, compile these in the Supervisor's office and send to the District Forester showing the status of all work on the Forest. Can't we start at the bottom to cut out our old system of generalized reports and install a concentrated, comprehensive, tabulated scheme instead?

I feel that the following advantages will result from such a plan:

1. Use of real schedules, easily constructed, based on an accessible list of work to be done and a field-made record of the status of each job.

2. Better administrative control because a tabulated record of the status of all work is available, not only for the preparation of schedules by the Ranger and by the Supervisor, but also for the definite analysis of work. The schedules and analysis should cut down on the amount of required field inspections.

3. More effective work, particularly by new men, because the things to look for are set forth and must be analyzed and an answer given.

4. An adequate and accessible record of things as they are which, if retained, can be referred to to determine past conditions.

5. Cutting down of necessary inspection by field officers by being able to judge the whole by the part, having an adequate and accessible record of conditions.

6. Cutting down of office work by the elimination of typewritten generalized reports.

Is Durability of Wood Dependent on Chemical Composition? What makes a wood durable? Is it because it contains a natural preservative?

The advertisers of redwood claim that "each fiber is protected by a layer of natural preservative" which in some mysterious way is also a fireproofing and acid-proofing agent and the cause of the long life and large size of the tree. In the case of resinous woods like longleaf pine, a certain relation is said to exist between the resin content and durability, although one author claims that this is a delusion.

Data already obtained indicate that there is a relationship between the chemical composition of various woods and their resistance to decay. In the case of all durable woods analyzed, some unusual extractive material is present in the wood. For instance, oak and chestnut contain tannin, redwood contains a tanninlike coloring matter, Osage orange contains a large amount of a dye, the cedars contain high proportions of volatile oils, and longleaf pine is high in resin. A project has now been started for determining the amount and kind of extract in the most durable species and for preparing samples of the extract for tests on the toxicity.

Foresters to Color Wood to Order: Does your timber sale operator want his lumber colored mahogany or robins-egg blue, or some other more or less popular shade?

We can get it for him according to a news item which states that a German engineer has found that a whole tree from the end of its roots to the topmost leaf can completely and permanently be colored within 8 hours. According to this article, "Anilin dye is used and 50 grains of it, together with 200 liters (about 50 gallons) of water are sufficient for a tree. Imitation of certain natural woods is declared possible through the process. Furniture, cigarette cases, penholders, and other articles are to be put on the market all made up in the new colored wood."

No Substitute for Wood as Pulp Material: In reply to an inquiry as to whether a satisfactory substitute for wood for pulp can be found, "Pulp and Paper" states that no work to date has yielded anything "upon which to base an opinion that any material will ever supersede wood as a source of raw material for paper making. From time to time materials will, no doubt, be developed which can be substituted in part for some of the wood now used, but in no case has the supply of material or the possibility of collecting it economically pointed to its use as a complete substitute for wood."

A Thank-You Letter from Portugal: . . "In hand your letter of 19th September and the publications on kiln drying that you have the kindness to send me, they are very interesting and I was very glad to find a catalogue referring to the practice wood-works, since the cut in forest until the fabrication of boxes and furnitures, passing by the dry which preoccuped us very much in Portugal.

"I looked for in Europe and I didn't find them, now let me to ask you some another publications, but I wish before to do a choise to send you my best acknowledgments."

DISTRICT 1 - NORTHERN DISTRICT

As a Result of the 1921 Ranger's examination, 32 men were certified for appointment on the Montana list and 20 on the Idaho list. On these lists twelve remain unappointed on the Montana list and only three on the Idaho list. Inquiries are being sent those remaining on the list, asking if they will accept appointment, if offered. Several are known to be enrolled in Forest schools, so that the number available for appointment is not believed to be much in excess of the District needs.

During the Past Field Season Mr. R. W. Burchard of the Geological Survey extended a triangulation system across the Nezperce Forest. Twelve primary and seventeen secondary stations were established.

This project is unique in being the first triangulation survey made in District #1 by the Forest Service and Geological Survey in cooperation. The observation work was done under ideal field conditions during the two month period August 2 to October 2. During the early part of the field season observation work was impossible due to the dense smoke which had drifted in from the large forest fires in Washington and Oregon.

DISTRICT 1 (Cont.)

It is expected that advance or preliminary data will be available on both costs and accomplishments before the end of the calendar year. A similar survey made by the Forest Service on the Kootenai during the 1921 field season cost approximately one-tenth of one cent per acre.--J.B.Y.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

A Land Classification Order: On October 28, Acting Secretary Pugsley signed an order reserving a tract of about 350 acres in the Holy Cross National Forest, for the use and enjoyment of the general public for recreation and devotional purposes.

It is the plan of the Catholic church to erect immediately a shrine for the use of its members where devotional exercises will be held annually, and which it is expected will result in extensive pilgrimages, from not only the State, but all over the United States.

This area is within view of the cross on Holy Cross Mountain, which is formed by snow accumulating in transverse gulches high on the mountain above timber line, where it remains in view during the summer season. It has attracted attention nationally, and mention is often found in some European magazine of this unique cross upon the mountain.

The idea was conceived by Father Carrigan of Red Cliff, Colorado, who has organized the "Mount of the Holy Cross Association" composed of citizens of adjacent towns.

Increasing Interest in Good Photography: Photography has come to the foreground during the past year, among the field force, to a greater extent than in any previous year. Approximately 80 copies of the District file of "American Photography" have been sent out to the field during the past summer, and each magazine was used from one to four times. Nothing so accurately shows conditions on the ground as a good photograph.

Timber Sale on the Bighorn: Definite application has been received from the Wyoming Railroad Company at Buffalo, Wyoming, for approximately 6 million feet of timber included in the South Fork of Clear Creek unit on the Bighorn Forest.

Timber Work on the Superior: Plans have been made for two timber survey parties on the Superior Forest in Minnesota during the coming winter period. One party is to continue work on the Birch Lake project which was started last year and includes a very extensive area consisting largely of pulpwood. This area has also been applied for by the Cloquet Lumber Company. The company has recently installed an additional unit at their pulp mill at Cloquet, so will be able to utilize such species as jack pine and aspen for pulpwood.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Forest Fires Not a Menace in India: An article in The Timberman for October says: "Forest fires are not a serious menace in India. One reason for this fact is that carrying fire, either in the form of lighted tobacco or otherwise, is prohibited by law during February to June, the dry season." Is this food for thought?

Forests and Agriculture: Current news from the Rio Grande Reclamation Project reports that this year's crop of cotton will be ten thousand bales, averaging from three-fourths of a bale to a bale per acre of what is known as long short-stapled cotton of fine quality with a value of over $1,350,000 at a price as low as 27¢ a pound, and there is a prospect that additional acreage will be planted next year. The watershed areas of the National Forests of New Mexico tributary to this project are entitled to part of the credit for this nice little income. The forests of Arizona also share in the results of the Salt River project, where it is reported that the first carload of grapes marketed by the Arizona Grape Growers' Association in Boston sold for $2,435.00, or $260.00 a ton, making the acre yield about $1,970.00. Salt River Valley Valencia oranges won first prize at the orange show in California, and the acreage on oranges on the project has increased from 543 acres in 1906 to 2,108 acres in 1922.

Standards of Sportsmanship: Observance of the letter of law is one, but only one, of the things that must precede successful game production in the Southwest. Another equally important condition is a general and gradual elevation of the ethics of sportsmanship.

As in other ethical questions, there can be no fixed dogma. What is ethical for a boy, afield with his first gun, may not be ethical for an experienced woodsman. But every hunter should have an ethical standard for his own guidance on such questions as these: Long range shooting and chances of crippling; how long and hard to search for cripples before giving them up; "potting" birds on the ground or water with a shotgun; ambushing big game and turkeys at waterings, especially during drouth; seeking "limits" rather than a mess; leaving meat in the woods; taking chances on meat spoiling; crowding other hunters; spoiling camp grounds; molesting property or disturbing people and livestock; voluntarily reporting unintentional damage to property or livestock or breach of law; seeking game when there is a chance to kill vermin; how low to kill off a herd or covey; voluntarily accepting handicaps in the pursuit of game.

Discussion of these questions with hunters, and setting a high standard in one's own practice, are effective means of spreading higher standards of sportsmanship.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Game Notes: Ranger Phillip's station yard at Antelope seems to be a chicken sanctuary. Any day the "wild" sage hens can be seen about the yards, on the lawn, and even on the front porch. A bunch of 18 were photographed feeding on the lawn and seemed to be as little concerned about the coming and going of the Ranger's family among them as the domesticated chickens.

A bunch of about 40 antelope graze in and around Ranger Cusick's pasture in the Pahsimeroi Valley. The antelope in Pahsimeroi are increasing in numbers, while in the Warm Springs country they are becoming fewer. It is believed that the decrease can be partly charged against the past hard winter as quite a number of dead antelope have been found throughout the spring and summer. Predatory animals and ruthless sports also contribute to the decrease.--Lemhi.

Bulletin Being Prepared by Dr. Sampson and Mr. Malmsten: Dr. Sampson and Mr. Malmsten are preparing a bulletin on the basis of work that has been conducted at the Great Basin Experiment Station for several years. This bulletin will treat on how to recognize when the range is ready for grazing in the spring; when the grazing season should close; methods and results of range revegetation; and the effect of various seasons and frequency of grazing in relation to forage yield. The outstanding feature of this report is that it shows interesting facts as to the relation of height growth of forage to yield. The height of the vegetation appears to be a safe guide in determining when the range is ready for grazing in the spring without affecting the forage yield. Forage plants harvested when they attained the height of from two to four inches give much lower yield in forage than those harvested when they have attained a height of six inches or more. When plants have attained the height of six inches they appear to grow quite as rapidly as vegetation of similar height which was not grazed. This shows conclusively that a forage type not grazed until the plants average in height six inches or more the subsequent growth of the vegetation is not decreased. On the other hand, when plants are cropped when they have only attained the growth of from two to four inches in height, a weak growth of vegetation follows.

Cedar Breaks Road Finished: The Cedar Breaks Road has now been completed and is a piece of work of which we are justly proud. We have received a number of favorable comments from several of the Union Pacific Railroad officials who have gone over it recently. The road is 8.8 miles in length, has been completed within less than two months time and at a cost considerably below the estimate. We do not yet have the exact figures, but the saving will be at least $2,500 or one-fourth of the estimated cost. It is now possible to make the loop trip around by Cedar Canyon, Cedar Breaks, and down Parowan Canyon on a good road all the way.--Dixie.

of Mountain Home, former Ranger, Ala Tiffany, Herbert Tiffany, and Samuel Tiffany, of Boise, business men, at Fall Creek looking over private timberlands in Forest. Throw cigarette or cigarettes. Fire unintentionally started. Trail taken up by Ranger Varner with aid of Diamond and bar tread automobile tires, paper pie containers, empty tomato can, paper drinking cup, wrapping paper, and description given by wife who saw four men in big car pass Pine Station, and information secured by questioning other persons along road. Varner followed party to Mountain Home, arriving there midnight. Routs out defendants; they promise to meet him next morning 8.30. Taken before magistrate defendants plead "not guilty." Magistrate says will hold car for evidence until trial. Defendants much worried, decide plead "guilty," pay fine $10, costs $3, special transportation of Ranger $25, damages to cover $12.35. This done, case closed.

DISTRICT 5 - CALIFORNIA DISTRICT

The End of a Perfect Day: After herding tourists all day and at 1 a. m., to be exact, Ranger Hayward was called by a nearby resort owner to quell a riot in the resort caused by three roughnecks plus two and one-half quarts of bootleg. Hayward "got" all three of them and walked them six miles to jail, but also got a broken nose and a black eye in the scrimmage. One fellow was sentenced to 100 days, another 90 days and $300.00 fine, and the third is in jail in default of $150.00 bail for resisting an officer.--R.H.C.

Showing the Right Spirit: We sometimes get discouraged at the spirit of indifference shown by many Forest users and recreation seekers when it comes to the strenuous work of fighting fires, yet there are many cases like the following that help to change our views:

On July 14, while inspecting the recreation resources of Big Bear Lake with Ranger Anderson, we discovered a fire starting on a ridge on the north side of the Lake and about 10 miles by road from where we were. Anderson drove to the Ranger Station, which was on the way to the fire, and just as he got there a summer home permittee drove up rapidly to report the fire. When we reached it we found three Boy Scouts on the fire line, while another boy, a resort proprietor and the wife of the cook at the resort, were on the way up the hill to the fire. These Boy Scouts were out on the lake in a motor boat when they saw the fire (caused by a careless smoker) start. They crossed the lake to the resort nearest the fire, got some tools and made a home run up the hill and were doing good work on the fire when Ranger Anderson arrived on the line and soon brought it under control.

Next day I came over to Seven Oaks to see some more of Charlton's summer home people and had no sooner landed than a dry electric storm started a fire about 7 miles from the resort. The nearest Forest Guard was waiting to take me around the country, but instead we headed toward the fire. Just as we started, a young man guest at the resort asked if he might go along and fight fire and his services were gladly accepted.

After the fire was rounded up, I asked him why he volunteered, and he said that he enjoyed the mountains and believed that it was the duty of all those who used the mountains to assist in their protection. These are only two incidents of the many that doubtless occur in a season where the Forest officers' pathway is made a little brighter by the people who use the mountains. Let's educate all Forest users to take this view of it.--L.A.B.

Some Record: The report of timber cut and sold for the quarter ending September 30 shows that there has been $479,000.00 worth of timber cut so far this year. It is estimated that the cut for the year will reach $700,000.00, or double our previous best year.

Diogenes Can Now Take a Rest: Sheriff Braden, of Quincy, headquarters of the Plumas National Forest, has at last run across an honest man. H. J. Hoffman, of Corning, went into the wildest sections of Plumas County to enjoy a brief vacation. He hunted and fished and spent his evenings around a big bonfire in the midst of the Plumas National Forest. Finally came the time to leave for home, and he did. When he arrived in Corning he realized that he had neglected to put out his fire. He immediately wired Sheriff Braden and asked to be arrested. The sheriff obliged by proxy. Justice Miller imposed a fine of $25. Honest Hoffman remitted by wire, and the recording angel made an entry on the credit side of the ledger.--J.G.C.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Scenic Road Begun: Contractors have begun work on the road from Shuksan to Austin Pass, under the shadow of Mts. Baker and Shuksan of the Washington Forest. A Fordson tractor is being used effectively to pull out the stumps (after being loosened by blasting) from the right of way. Highway Engineer Polk of the B.P.R. is in charge of Survey and Construction Work.

One of the Candidates for Governor in D-6 this fall has the following tax reduction planks as the first two in his platform:

(1) "Have paid into the State, instead of to Federal Government all rentals from grazing lands in forest reserves, 65 per cent of which now goes to U. S. Treasury. New revenue from that source $350,000.

(2) Tax for State on all timber as it is removed from forest reserves, several billion feet of which is now contracted to parties from distant States and on which no tax will be paid unless this plan is adopted. Would be a large and increasing source of revenue to State. Would enable direct tax on property to be lowered."

THE BRIEFEST FOREST FIRE CREED EVER WRITTEN

The foreword to the Pennsylvania forest fire manual recently issued was written by Gifford Pinchot, and is so abruptly brief that any introductory comment would exceed in length the text itself. Here it is:

> "THE FOREST IS YOUR FRIEND.
> "The water you drink comes from it.
> "Nothing you use or wear could be yours without the forest's help.
> "The State forests are your playground.
> "They are wide open for you to fish, hunt and camp.
> "Our forests are almost gone.
> "They will grow if fires are kept out.
> "THE FOREST FIRE IS YOUR ENEMY."

DISTRICT 7 - EASTERN DISTRICT

"Down Under the Hill There was a Little Still"; the revenue officers on November 4 found it, smashed it, and set fire to the tubs; the fire got away and before it was finally extinguished 900 good acres on the Unaka were desolated. It now appears that this prohibition law enforcement case will soon develop into a much more interesting fire law enforcement case.

On October 3, Mr. George Young of Fairwood, Va., set out a brush fire; the fire went wild and Mr. Young made no effort to suppress it. Fire Guard Rufus Brooks of the Unaka was immediately on the job and with a crew of 10 men suppressed the fire, confining it entirely to lands owned by Mr. Young. So much for direct action. By way of a follow-up, Guard Dabord initiated negotiations which resulted in Mr. Young voluntarily paying the cost of suppression, totaling $19.75, and in the retention by the Service of Mr. Young's good will.

The Baltimore and Ohio Railroad is becoming very much interested in the National Forests of District 7, particularly those adjacent to their lines. As an outgrowth of Public Relations work with the Cincinnati Chamber of Commerce this summer, working contact has been established with the Baltimore and Ohio passenger traffic department; a great deal of information has been supplied to this department and conditions look promising for some effective cooperative work.

Service Bulletin

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THE COOLEY MANAGEMENT CONFERENCE

By E. E. Carter, Washington

Six days of open, frank discussion, broken only by a short field trip in a snowstorm, covered too many subjects to be summarized here. There were, however, two or three dominating thoughts which underlay much of the discussion. The first was that the fundamental job of all Forest officers is timber growing, and that there is danger that this fact will be lost sight of in the multiplication of duties which press on the Ranger and Supervisor. Nothing new in it? Of course not. But the ground note of the Conference was that it must be recognized more in practice and that Forest officers must in fact be foresters. The most earnest discussions of the entire Conference centered on this idea.

Another high point in the discussions was the need for definite planning in the use of the timber resources on the National Forests, through policy statements and simple management plans made and used by the local forces. That we are at the beginning of a tremendous increase in the use of National Forest timber and that nothing but common-sense planning for the systematic use of what we have will meet the situation were thoughts that struck home with greater force than ever before. The preparation of management plans as a current job and their current use took a more definite place in the everyday work on the Forests.

And then the rather grim determination to have our sale areas real growing forests! "The condition of the ground is what counts." There was an absence of boasting. There were frank confessions of partial and small-scale failures. The disposition on the part of everybody was to look at things as they are. It was unnecessary to talk of standards; everybody knew what the standard should be. From the Forester down there was determination to be hard-boiled where the growing of new crops was involved.

Being human, everybody growled about the grub and then publicly and privately expressed appreciation for the way District 3 had handled the arrangements for the Conference. The stops in Holbrook showed at least one possible disadvantage of holding a conference in a town, for the sale to visiting Forest officers of soda water and very distant beer nearly exhausted the town's supply on Saturday night. The bunch scattered with baggage bursting with petrified wood and Navajo blankets, to carry into practice from Maine to California and from Florida to Alaska the principles threshed out among the snowdrifts of Cooley.

SIDE NOTES ON THE COOLEY CONFERENCES

Rutledge, Morse and Stoddard came the hardest way - across the Grand Canyon. The Mogollon Rim had no attractions for them.

Flory rushed back to Alaska to get warm.

Evans came without an overcoat. But then, he wasn't really responsible - married on the way back.

Herbert Smith and Pooler did not beat the Colonel at chess. Diplomatic? Not that way.

Jim Girard and Stoddard had to be dragged away from the sawmill. It was the only quiet place to talk that they could find.

Ames's comment on the Petrified Forest,- "Paul Bunyan ought to have fired his camp foreman. Rotten bucking and worse logging. Good brush disposal, however."

Miller,- "The sheep are killing off the reproduction on my Forest."

Ramsdell,- "The reproduction is killing off the sheep in mine."

Eldredge advised the development of hoggish traits. At the table that evening he was made to see his error.

Carter tried to vote, but was caught at it and sternly repressed.

The trip out to Holbrook was slow until the glee club organized. Then the engineer tried to get ahead.

Jim Girard was receiving congratulations on the fit of his rented uniform as he blushingly exhibited it one day.

The aluminum necktie was presented to Redington for his story concerning the burro on Noah's Ark, and a pound of Bull Durham to Preston for his exposition of strange and little known facts.

Chorus, as the Colonel started his 63rd evening side conference. "How does he stand it?"

The confirmed (?) bachelors, Ames, Woodbury, and Heintzleman, were the heaviest buyers of Navajo blankets; for the hope chests, probably. Price also bought several, but took home only one.

One of Col. Peck's committee reports was received with applause from both sides, each considering it a complete victory.

After the third day of the conference Gill wired back to add an extra wing to his new house.

The beardless Bolsheviki of District 1 were ably represented by Koch and Fitzwater. Each was on only one committee, so only two minority reports were presented to the conference. They put them over, too.

It looked for a time as if the railroad wrecking derrick would be taken along to unload Quincy Randles from the coal car.

A GRAVE QUESTION

By R. D. Forbes, Southern Exp. Sta.

These Associate Silviculturists are hard to beat. The Southern Forest Experiment Station was recently asked by the good citizens of Tallahassee, Florida, to suggest a suitable tree to plant on thirty or forty acres which they are dedicating as a graveyard, but which will not be in immediate demand for that purpose. The idea is to grow a crop of trees which will produce something of commercial value and can then be thinned out for ornamental purposes.

The Director of the Station read the request, stuttered a little, and slipped the letter into the attention basket of Associate Silviculturist Wyman, when Mr. Wyman wasn't looking. Ten minutes later Wyman is informing Tallahassee that red cedar is what they want. It will be big enough for posts to fence the cemetery with by the time thinnings are necessary, and its solemn spires will be just the thing for ornamenting a graveyard. While we have never been able to figure the need for a fence under such circumstances - nobody outside wants to get in, and those inside can't get out - we grant that it is customary, and award Mr. Wyman the handsome India-rubber corkscrew!

WHERE GOES THE PENCIL?

By Evan W. Kelley, Washington

Sixty nine thousand nine hundred and two (69,902). Look and study these figures carefully. Sixty nine thousand nine hundred and two lead pencils were purchased and distributed by the Forest Service last fiscal year.

Four thousand nine hundred and fifteen (4,915) people are on the rolls of the Forest Service. Likewise study those figures well. That is all of us including janitors, charwomen, bus boys, messenger boys, lookouts, firemen, some of whom can neither read nor write, the carpenter at Ogden whose only job it is to make boxes, and on up the line to the Forester.

What does this mean? It shows that every person on our rolls on the average consumes during the year practically thirteen lead pencils exclusive of the Eversharp lead distributed to those whose tastes run to 14 carat gold sterling, tin vulcanized rubber self-propelling and repelling lead holders. There are many patented pencils in use.

Providing the guards, who surely on the average don't actually write away more than one pencil a season with that number, and eliminating the charwomen whose needs are only the broom and mop and throwing out others from the calculation who have little or no use for lead pencils, our distribution to those who do use them is nearly twenty seven pencils to each one.

What becomes of the pencils? This enormous number surely does not all find its way to profitable use. What is a fair number - six, or say, eight per person? Why not think about it? Who would not prefer to have $1,000 worth of fire tools and equipment than to contribute that amount of money for wasteful use of pencils? About $1,000 in pencil waste is what we pay for annually. What can each of us do toward reduction of this waste?

HAVE YOU HAD YOUR QUOTA OF LEISURE?

The forester's life is free from the humdrum of the office, the store, the workshop, or the schoolroom; it gives variety at every turn; the hardship of a day's ride in bad weather alternates with a day of leisure, of fishing and hunting. There is always the forest, ever varying, ever changing; the free out-of-doors with its wind and weather, fresh air and sunshine; stream and lake, rich in plant and animal life, and the many things which the forester's schooling has taught him to appreciate in a way generally quite unknown to the untrained person.

And beyond all this lies the fact that he works with Nature, with clean things, remote from the worrying crowd, and, in addition, has the satisfaction of leading in the truly altruistic task of keeping and making the world beautiful and useful for generations yet to come.--U. of M. Forestry Curriculum.

"PINES THAT COME BACK"

By W. R. Mattoon, Washington

A new motion picture, recently released by the Department and now available, is entitled "Pines That Come Back." It is our first silvicultural picture for the eastern United States and shows the growing of pine as a profitable crop for sandy lands. It, therefore, makes a useful and valuable addition to the Forest Service motion pictures, most of which deal with fire protection, scenery, and recreation on the National Forests. The scenario was worked up cooperatively by the Maryland State Board of Forestry and the Forest Service and the picture was taken on the "Eastern Shore" of Maryland, where loblolly pine occurs in abundance over many square miles of the Coastal Plain.

While the species happens to be loblolly, the story makes this timber-growing picture applicable to southern pines in general (including shortleaf, slash, and longleaf) and therefore of wide interest over the southeastern portion of the United States. Three successive days of uninterrupted sunshine last May enabled the camera man and director, of the Department, to secure excellent pictures for a thousand-foot, one-reel film. The picture has been pronounced by the Department experts as excellent in many respects.

Some tracts are shown being cut and the timber marketed. Cutting crews are shown thinning out crooked and defective trees for firewood and pulpwood. A small portable sawmill and splitting outfit are seen in operation, which enabled their owner in the thinning of a 15-year-old stand of loblolly to realize a net profit of $1.05 per cord, or $11.55 per acre. In one stand, the larger crooked trees are being spotted to be cut and worked up into barrel staves and crates, while other trees are to be cut for mine props.

Straight, clean trees of medium size are chosen for piling, and the largest trees for lumber. Sawmills are shown cutting logs into staves and into lumber. In one view, a big truck is loading piles with its own power, and this is followed by a pile driver at work on a wharf. A landowner and forester stroll through an arched avenue in a 12-year-old plantation of pines that now stand about 20 feet in height, and they break off the dead lower limbs, showing the natural pruning of the trees at this early age. Seedlings are dug up along the edge of the woods and planted, illustrating how this young forest was started on a piece of abandoned farm land. The forester brings the owner back to his field of pine saplings. After a short reflection on all he has seen, the owner decides to avoid the mistake of clearing up the old field and to keep the land productive in growing a crop of timber.

State Forester Besley, a Virginian, takes the part of the farmer and Assistant Forester Cope that of the forester.

The South has many millions of acres of land which will become valuable to the owner and to the State only by the growing of pine timber. Destructive lumbering and fires are yearly increasing this area. The protection and reforestation of these lands mean permanent industries, attractive homes, good roads and efficient schools. "Pines that Come Back" shows the uses of second-growth timber, the essentials of good forestry, and how the growing of timber will give a profitable return on lands not suitable for field crops.

DISCOVERED IN WASHINGTON

By John B. Cuno, Washington

When a prominent botanist steps into your office with a piece of wood which he claims was found in the remains of a swamp forest thirty feet below the level of the streets right in the heart of the city of Washington, your hair stands on end. When he goes on to say that Geological Survey experts claim that the muck in which the wood exists is some 20,000 to 30,000 years old, you begin to question the man. You wonder how wood could actually be preserved that long, but in the words of the scientist, "Why not, if properly canned?"

Well, to tell the narrative, I lost no time in going down into the excavation for the Hotel Walker on Connecticut Avenue and De Salles Street, where I found stumps and trunks and branches galore imbedded in the putty-like grey muck, the stumps, some of which were 6 and 7 feet across, standing out as so many stumps would stand out on cut-over land ten or more years after one cutting. I took a pick and hewed out some pieces which were just as sound as the day they were formed. These pieces the Forest Products Laboratory identified as cypress. Seeds and leaves uncovered revealed the fact that the species was the same as the present day bald cypress, Taxodium distichum.

Some of the older residents claim that the swamp was filled in during their lifetime, but one look at the excavation would convince you that the swamp forest has been there for ages. In "Science" for November 10 we find the statement that the trees flourished in days "contemporary with earliest man in America." You can see the fine clay and pebbles which were laid down over the layer of stumps and plant debris by streams of the glacial epoch. The trees lived in the latter part of the Great Ice Age.

The excavation can be seen to good advantage at this writing. Stumps and remains of branches are plentiful and, as a matter of fact, are a hindrance to the steam shovels. The Walker Corporation would be pleased to have members of the Forest Service take away several wheelbarrow loads of samples.

FOREST PRODUCTS LABORATORY

Study of Wood Finishes Begun: What is the best paint, varnish, or other finishing material to use for every species of wood for any specific purpose? To be more concrete, what finish for wooden vehicle wheels will prevent the absorption or drying out of moisture with consequent loosening of joints? What is an inexpensive paint that will last longer and give better protection to farm and other outdoor tools? Or within the Forest Service, what are the best paints for signboards?

Many other questions like these show that while thousands of dollars have been spent and great advance made in the development of paints and varnishes, comparatively little has been done to study the relation of finishes to wood. As a result of several conferences an Executive Committee on Wood Finishing Research has been formed with representatives of the architects, the manufacturers of musical instruments, furniture, farm implements, the National Association of Wood Using Industries, the American Farm Bureau Federation, and the Engineering Foundation to encourage and assist in the prosecution of this work. The study will require some time. Available information on the painting and varnishing of wood is now being collected, and, after the conditions and problems to be met are studied, a comprehensive plan of procedure will be mapped out.

Treatment of Wood by Nonpressure Processes: The Laboratory has been preaching wood preservation to various small wood users, especially farmers, for many years with very little increase in the use by them of preservative-treated timbers. Apparently this is due to the high cost of creosote oil when purchased in small quantities and the difficulty often of getting it at any price.

Because the pressure methods are expensive and available almost exclusively to large consumers, there is a great need for the development and popularization of simpler and cheaper methods of treatment, especially with water-soluble preservatives as zinc chloride. A study for this purpose has been started and the necessary material, representing red oak, white oak, aspen, and Norway poplar for the first runs has been obtained and is being prepared for use.

DISTRICT 1 - NORTHERN DISTRICT

Mining Mill Site Location vs. Special Use Permit: Forest officers have for a long time been concerned over the possibility that a special user who has spent considerable amounts in improvements might on occasion have to lose his privileges due to a mining location. The question has arisen whether the special use would hold as against a subsequent mineral location. For that reason a recent case in District 1 is of considerable interest and value as establishing a precedent.

Judge Bourquin, in the United States District Court for Montana, handed down a very important decision in the case of United States vs. R.S. Taylor and F. A. Wyman. The court held that the rights of J. W. Acuff on a residence special use permit were superior to the claim of Taylor and Wyman which was based on a mill site location made and recorded in the county records subsequent to the date of the issuance of the special use permit. The decree was entered upon the default of the defendants, who were permanently restrained from interfering with the occupancy of the special use permittee or with the right of the Government to regulate the use of the five-acre tract involved.

There is one possible fly in the ointment. Judge Bourquin's decision specifically mentions that the area is nonmineral land. It may be for that reason that the ruling might not hold in the event of a similar conflict between a special use and a lode or placer location.--M.H.W.

Supervisors' Group Allotment Conferences: On account of the District Foresters' meeting scheduled to be held beginning February 5, 1923, for the purpose of a grazing conference, allotment conference, and discussion of the proposed new administrative section of the Manual, it is planned to start the Supervisors' group allotment conferences in this district about January 8.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Effect of Hail on Yellow Pine: A hailstorm occurred on July 25, 1921, in the vicinity of Redfern, South Dakota. The severe hail lasted 15 or 20 minutes, covering the ground to a depth of 3 or 4 inches, and was accompanied by a gale from the west,

The investigation of June 1922 shows that the area noticeably affected is about 1½ miles wide and at least that long. Needles did not turn brown until this spring. The loss of limbs and foliage last summer undoubtedly impaired the health and vigor and reduced the growing capacity of all trees, and the severe bruising, the effect of which shows up plainly now, has further weakened all the living trees and has killed many.

The smaller the tree, the more severe was the damage. It is estimated that 30 per cent of the exposed reproduction under 2 feet high is dead. About 20 - 25 per cent of the small limbs (mostly under 1") still on the trees are now dead and probably 15 per cent of the terminal twigs were either broken off or killed.

An uncertain element of damage is the possibility of serious disease or insect infestation due to the generally weakened condition of the trees and the open wounds which will afford an easy entry for fungi and some insects, and the exudations of pitch may attract the Black Hills Dendroctonous.

A Milk Tooth Probably: What is believed to be a tooth of a Dinosaur, Pterodactyl, Pleisosaurus or some other huge reptile that inhabited the globe during the Mesozoic age, was unearthed a few days ago by a road grading machine on the construction of the Squirrel Creek Road in the San Isabel National Forest, and brought to Denver by J. L. Brownlee, Assistant District Engineer.

The petrified tooth weighs three and one-half pounds and is triangular shaped, eight inches high by nine inches wide and three inches thick. It has eleven deep grooves running lengthwise which are apparently so well cut as to give authorities belief that the tooth has been almost perfectly preserved.

Mr. G. G. Anderson, personnel officer from the Washington office, spent two weeks recently in District 2. One week was spent in the Pike office at Colorado Springs.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Nautical: If we must stick to these military titles, why not adopt some nautical terms for our "Timber sailors?" The Scale Book could properly be called the "Log Book"; it's the record that tries to justify the cruise; we already have the "keel"; the scale stick might well be classed as the "mast" for it keeps the "keel" on end; the axe as "old fore and aft" because it requires both ends of it to fill the Log Book, support the "mast" and wear out the "keel"; the officer in charge as the "Skipper," and the scaler as a "Seaman." No? All right.--Sitgreaves.

Public Lands: The General Land Office announces that on July 1, 1922, there were 13,591,840 acres in Arizona and 16,490,081 acres in New Mexico of vacant, unappropriated and unreserved public lands. All but two and one-half million acres in New Mexico are surveyed, but more than half of the area in Arizona is still awaiting survey. In the entire United States, excluding Alaska, there are still around 183,000,000 acres of unappropriated land outside the reservations.

Monumenting Turnouts: Project Foreman Young, who is building the Long Valley Road on the Coconino, is placing stone monuments at both ends of his turnouts. It is believed that this will be a great help to drivers of cars on a narrow road, especially at night. Sometimes a 9-foot road will have places 12 and 14 feet wide due to accidents of formation and topography. A driver is liable to mistake these for turnouts, and if he finds them too narrow and has to back out, he is not pleased. But if turnouts are monumented, he will know which wide places are wide enough for turnouts and which are not. Possibly a single monument at the widest place, instead of one at each end, would be sufficient. Whitewashed posts may be used in place of monuments. All monuments or posts should, of course, be just off the actual used surface of the road. Supervisors who are building narrow roads may desire to consider this proposition.

Man Caused Fires More Than Average: Of 883 fires in the district 557 were from lightning and 326 man caused. The average for 10 years is 526 - 242 from lightning and 284 man caused.

Perfect Voucher Week: During the week from October 2 to 7, inclusive, 1922, there were 280 vouchers received and only 9 errors noted. Congratulations to all concerned in this matter.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Baker Has Returned from the East: While in the East, Mr. F. S. Baker visited his brother-in-law, who runs a small sawmill in New Hampshire. It was strikingly different from our western outfits, for although the main sawmill was of the usual size and capacity of most of our small mills, it was accompanied by the most amazing number of accessory machines, - as a cut-off saw for making bolts; a planer; edger; sort of a trimmer; small saws for doing special jobs; ashingle machine; steaming boxes; hoop machines; and so on. The chief output of the mill is hardwood plank (not edged) which is used by chair factories, etc. Pine and hemlock are also sawed. The mill turns out, in addition to this lumber, barrel heading stock; chair crating; thousands of children's hoops (to roll on the sidewalk); tomato vine supports (hoops set on four legs to stick into the ground); insect nets (like the ribs of a basket covered with mosquito bar); wedges (hammer, axe, hatchet, maul, etc.) from 2 inches to 2 feet long; shingles; and probably other things. Mills like that bring about wonderful utilization - unfortunately it looks like a long time ahead before we get specialized mills like that in the Intermountain District.

Cooperation of Boy Scouts: That the Boy Scouts are alive to Forest Service ideas is evidenced by the fact that Assistant Scoutmaster Ben. M. Bingham, of Troop 2 (the troop which put out the fire in the mountains recently), has volunteered to operate our motion picture machine and show the Department reels any place in Weber County and on any evening that we want them shown. This will make it unnecessary for novices to operate the machine, and will insure better results. Arrangements are made whereby he will show these reels to the eight scout troops in Weber Stake, and will then show them to the troops of the Ogden, Mount Ogden, and North Weber Stakes. All the people living in the district where these shows take place are invited by the Scouts to attend.

New Plant Named After Malmsten: A new plant has been named after Mr. Harry M. Malmsten, of the Great Basin Experiment Station. During 1916 a small but very ordinary looking Senecio was collected by Mr. Malmsten on what is now the Sevier division of the Powell-Sevier Forest, and forwarded to Washington for identification. The authorities of the Bureau of Plant Industry were unable to find any previous collection of this plant, and hence it has been described as a new species and named Senecio malmstenii by Dr. S. F. Blake, the authority on the composite group of plants in Washington. The original plant collected by Mr. Malmsten has been retained in the U. S. National Herbarium as the "type" for the species.--C.L.F.

DISTRICT 5 - CALIFORNIA DISTRICT

Going Up! From present indications the volume of fiscal business for the year ending June 30, 1923, will exceed all previous years by a considerable margin. Three hundred and fifty more vouchers were paid during the September quarter just closed than during the corresponding period last year. The District's steady expansion is clearly shown by the following table:

Fiscal year	Vouchers paid	Checks issued	Amount of payments
1910	7,771	13,634	$570,798.25
1911	9,269	18,875	661,651.55
1912	9,051	17,230	673,511.93
1913	9,237	18,266	690,127.10
1914	10,710	22,389	863,473.13
1915	10,617	23,095	876,889.72
1916	11,136	21,446	832,327.36
1917	11,343	21,178	867,646.70
1918	14,432	27,714	1,020,463.98
1919	14,473	25,375	1,085,846.33
1920	15,754	28,972	1,860,725.10
1921	15,118	28,653	1,911,764.94
1922	15,252	29,841	1,829,587.22

Swayne Lumber Company Awarded Sale: The Granite Basin Unit of the Plumas National Forest, supporting a stand of 167 million feet of timber, has been awarded to the Swayne Lumber Company. The timber consists of nine species: yellow, Jeffrey, sugar, white and lodgepole pine, Douglas, white and red fir, and incense cedar. The initial rates, which will hold until July 1, 1926, are $3.50 for sugar pine, $3.00 for yellow, Jeffrey and white pine, and $1.00 for the other species. Cutting on this sale will not be heavy for the next two or three years, but from then on a great part of the output of the Swayne Lumber Company will come from this unit. The contract is to be completed by December 31, 1938.--J.H.P.

A Corporation Recreation Camp: Near Little Bear Lake on the Angeles Forest the Pacific Electric Railway Company operates a model recreation camp for its employees. Housekeeping tents are rented at $6.00 per week for a whole family; supplies are sold at wholesale prices, and for those who do not want to cook there is a cafeteria where meals are sold at cost. And in addition to providing a cheap outing, each employee of the company gets 15 days annual vacation with full pay.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Forest Service Monuments: The idea has doubtless occurred to many members of the Forest Service that since areas are being set aside for municipalities, Boy Scout organizations, and others, it would be highly appropriate to reserve for the use of Forest Service members and their families some special tracts that would be in a measure dedicated to "We who serve," and which might be selected with an eye to the beauty and bigness that has appealed to us and that is such a large factor in our love for the work. I ask the question - why shouldn't we select sites of sufficient area and desirability where employees of the Forest Service and their families (and others, too) may vacation in comfort? I suggest the organization of a vacation association, to provide funds for the erection of perhaps a central assembly hall or loafing room with kitchen, bath, and toilets, and tent platforms. The Cascade knows of several such choice areas, and hopes that this suggestion may come to fruition.

From the Seattle Branch Laboratory: C. W. Zimmerman has just completed a report entitled, "Tests of the Holding Force of Common and Screw Railroad Spikes in Natural and Treated Douglas Fir Ties." The tests were made for the purpose of determining the relative holding force of common railroad spikes driven into various sized holes, common railroad spikes driven without boring holes, and common screw spikes in holes the size of the spike at the base of the thread, in green natural, green treated, and in air-dry natural Douglas fir ties.

DISTRICT 7 - EASTERN DISTRICT

An Unusually Severe Fall Fire Season is generally reported from the Forests of the East and South. The Shenandoah, with an exceptionally good system of cooperative fire protection, is employing emergency guards for the first time, and practically on all of the Forests more guards than usual have been put on and the period of their employment will doubtless be abnormal. Supervisor Russell of the Unaka states that this is the most serious fall fire season he has ever experienced; streams are the lowest they have ever been, the air is smoky much of the time, so smoky that lookouts have been functioning with great difficulty. There has been practically no rain and as a general rule cloudy mornings have been followed by high winds. This situation has prevailed since the middle of October, gradually becoming more severe, with no let-up in sight at present. Fortunately, thus far there have been no periods of several days duration of high winds, such as occurred in 1921. It appears from the incomplete reports at hand that acreages burned have been relatively light and that damage to Forest lands is being held down to a gratifying degree.

Service Bulletin
U. S. FOREST SERVICE
(Contents Confidential)

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LAND EXCHANGE AND LAND PURCHASE
A BUSINESS PROPOSITION

by
Col. W. B. Greeley

The United States has been acquiring land for National Forest purposes since 1911. Something over $12,000,000 has been expended for this purpose and about 2,140,000 acres have been bought. All of these purchases are passed upon by a Commission composed of members of Congress and the Cabinet, whose decisions and rulings in the course of eleven years have pretty clearly defined the viewpoint of the Government as a buyer of forest land.

That viewpoint is necessarily the same whether the Government is buying National Forests, post office sites, or cement for the Panama Canal. The public benefits sought may be vast and far-reaching; but the commodities needed for their attainment are bought at their prevailing commercial values and in the open market as far as practicable. It would be small justification for an administrative officer to pay more for a camp ground or a carload of airplane spruce than either was worth in its local market, on the ground of the high public purposes to be served; and administrative officers who indulge such propensities do not find themselves long in control of public funds.

The commercial valuation of logged-off land is often difficult because of the limited market for it. In regions where the United States is purchasing National Forests, transfers of cut-over land are usually few and the Government may find itself the only active buyer. What does the Forest Service do under such circumstances? Exactly what any commercial organization which is out to buy land or timber in a sluggish market would do. We feel out our market. We get competitive offers. We find out the lowest price at which the kind of land we want will move; and we round up all the land obtainable at that price.

In the appraisal of eastern forest lands, the valuation of young tree growth has been a mooted question. In a few instances it has acquired what may be termed a local commercial value. More frequently it is an intangible element of value in the mind of the owner, not to be appraised specifically in dollars and cents but nevertheless influencing the price at which he is willing to sell. The Forest Service recognizes the cash value of young growth to the extent that it is a demonstrable commercial factor in any land market where we want to buy - or that it influences, consciously or otherwise, the rate at which forest landowners are willing to sell. As a matter of fact, at the prevailing rates at which the Government is able to buy land in eastern forest regions, it would usually be difficult to assign any specific amount which is paid for young growth as distinct from the bare land itself and the merchantable material which parts of it may contain.

The purchase of forest lands in the eastern States has enabled the Forest Service to cut its eye-teeth in forest land appraisals, and the same policy which governs the buying of land in the East must largely govern the trading of land in the West. In one case we are buying additions to the National Forests with Government dollars; in the other case we are buying additions to the National Forests with Government property, either land or timber. There is no essential difference. The responsibility of the Service for the wise investment of public property is exactly the same as for the wise investment of public cash.

By the Act of March 20, 1922, the Forest Service received authority to make exchanges within the present boundaries of all National Forests, the law permitting an exchange of Government land and timber or of Government timber alone in return for private land. In my judgment, the chief purpose of the Forest Service in the application of this law must be to build up the area of the National Forests with good timber-growing land. Opportunity will be afforded no less to block up logical economic units of forest land where economy in protection and continuity in timber yields and industrial operations will be promoted by consolidated federal ownership.

The Forest Service has a very clear business responsibility as the manager of a vast public estate. Our accounting for this property, whether disposed of through timber sales in return for cash or through exchanges in return for land, must stand the same test of soundness and prudence which any court would exact from the executor of a private estate. However keen our desire to promote the general growing of trees, we can not pay people to do so with national property, unless there is a commercial "quid pro quo," a demonstrable commercial value which returns to the Government the equivalent of what it gives.

STEELHEAD TROUT ON THE SAWTOOTH

By S. B. Locke, D-4

Collections of trout made at Roaring Creek Lake in the Sawtooth Mountains last summer have just been identified by Dr. Wm. C. Kendall, icthyologist for the Roosevelt Wild Life Experiment Station. He finds them to be identical with the Columbia River steelhead. These can not be the migratory steelhead since until the last two seasons these fish have been unable to pass the Sunbeam dam, and the outlet of the lake would be very difficult for fish to ascend. The most probable explanation of their presence is that a few steelhead trout at one time ascended Roaring Creek to the lake where they spawned. Their progeny, or at least part of them, found conditions so favorable that they did not return to the ocean as is customary with the young steelheads. Eventually a strain of steelheads was developed which had no inclination to migrate to the sea. These fish bear a very similar relation to the ocean steelhead as does the little redfish to the big redfish or blueback salmon.

Roaring Creek Lake is the lower and larger of a very beautiful series of lakes scattered at the headwaters of the creek from which it gets its name. If scenery and pure water could have any influence there is plenty of reason for these trout deciding to remain in the lake.

Besides the trout, suckers and silverside minnows occur there. Their presence as a source of food supply for the trout may have had something to do with the steelhead making it a permanent home.

The trout are very silvery in color and have coarser scales than the "redsides" or native cutthroat which is the most abundant true trout in the Salmon River region. They take a fly readily and fight vigorously when hooked, leaping from the water frequently.

Roaring Creek Lake was not known to contain trout until in the summer of 1921 two game wardens planting fish there observed fish jumping and caught a few on tackle improvised from saddle strings and some hooks which happened to be in a hatband. Since then several fishermen, including Governor Davis of Idaho, have visited the lake and found excellent sport. A new interest is now given the lake in the knowledge that true steelheads are found there.

BERT GODDARD.

Bert Goddard - "The Chief," as we always called him - is dead. Striking in his command of men's affection and loyalty, warm, affectionate, communicative himself, he brought out these human traits in others. He led men - and he led them with extraordinary success - because they liked him. He was accustomed to bestow praise, and in reproving failures he could always charitably trace them to some weakness we all possess in greater or less degree. He was genial, responsive, a good talker, and an admirable story-teller, who had himself acted many colorful and venturesome roles and could describe them with humor and charm. Above all, his was one of those rare spirits that do not age under "the rude waste of old Time." The Great Mother had given him an over-welling abundance of living energy - he loved life and kept it always fresh. To live - to live fully and joyously - was the first call, not to be obscured by meaner things. Dying at forty-five, he was essentially youthful, but mellowed by long knowledge of human sorrow and weariness.

It was because of all these things that Bert Goddard was chiefly - and most invaluably - a trainer of men. His love of life was too great to permit him ever to become a mere machinelike administrator. He inspired men, he moulded them; he was always able, to borrow a figure from poetry, to bring them out into the full light, where they could grow. It is his rich return that men have loved him greatly.--W.S.

POWER PUMPS FOR FIRE CONTROL

By E. W. Kelley, Washington

We have heard of the Fairbanks Morse Portable Power Pump, the pump commonly used for fighting fire by the British Columbia Forest Service, but until recently the well-known Evinrude Motor Company in the pump world held little renown. That enterprising concern after its development of the very efficient portable boat motor has entered into competition with the pioneers in the portable fire fighting power pump manufacture by offering to the trade a portable power pump weighing only 99½ pounds. Briefly given its specifications are as follows:

> 4-5 H.P. Evinrude Twin Power Engine, R.P.M. 400 minimum, 1500 maximum. Gasoline tank capacity 1½ gal. (motor runs 2¼ hours on one gal.) Pump, gear design. Suction, 1½" standard thread. Discharge, 1½" standard thread. Base, aluminum designed for bolting down. Parts, all standard carried in stock. Weight 99½#.

Performance

According to report of tests made before the Standardization Committee of Forest Fire Protection in Ottawa during September, here is what the pump demonstrated.

September 6th.--The pump was placed on a barge in the Ottawa River and about eight feet from the surface of the water. The first test was made by laying 1,300 feet of 1½" linen fire hose up the Canal bank to a height of about 91 feet above the river. With a ½" nozzle it delivered 29 gallons per minute, and threw a stream 150 feet. The hose friction was equal to a head of 65 feet, making a total head of 156 feet. A 3/8" nozzle was then put on, and the delivery at the same point was 25 gallons per minute, and this stream was thrown considerably further. The pressure in both these runs was 145 lbs. at the pump. On the third run a ½" nozzle was used and the delivery was 27.6 gallons with 165 lbs. pressure at the pump.

September 7th.--The pump was placed on a raft at the same point in the Ottawa River. 1,500 feet of hose was laid along the west bank to the top of Parliament Hill, Parliament Hill being 175 feet above the river. It delivered 19.4 gallons per minute through a 3/8" nozzle at the top of the hill, and threw the stream approximately 50 feet horizontally, and almost the same distance vertically. The pressure at the pump ranged from 140 to 160 lbs. The hose friction in this case was equal to 75 foot head, making a total of approximately 250 feet.

POWER PUMPS FOR FIRE CONTROL (Cont.)

September 8th.--A short demonstration was made to see how far the pump would throw a stream, using ¼" and ½" nozzles. With the ¼" nozzle the point of saturation was 80 feet on the level, and with the ½" this was a little less. The level of the water in which the suction was plunged was below 12 feet. This suction head of 12 feet was very readily picked up by the pump, without priming, which demonstrates the very high efficiency of the unit.

Where is the place for the power pump in control of forest fires in the United States Forest Service? On the line in more instances than it has ever been used. But perhaps it will prove its greatest value as a means of extinguishing fires once the first stroke of control is accomplished. We will then organize to put out fires with pumps where water is available. The effective place of the pump will be in finishing the job - to make impossible the fire that gets away - from the time-worn cause, "it was controlled but a spark blew over the line and away she went." For fighting spot fires, too, it will have a place not yet fully proven to be sure, but promising great merit nevertheless.

SOMETHING FOR NOTHING

By H. B. Herms, Washington

Recently the Branch of Operation secured and shipped to the field 2,350 cases of surgical dressings and 50,000 metal packets of individual dressings. These are the small pocket size similar to those in use now.

This surgical material was secured from the surplus stock of the medical section of the army. The supply going to the field cost the army over $55,000, and through the courtesy of the budget and medical officials this ten-year supply of surgical dressings was placed in the hands of the Service, because of its hazardous occupations and the isolated localities in which a great part of its personnel is located.

Here is what the material cost the War Department:

350 cases	@ $48.00	......	$16,800	
2,000 "	" 13.00	......	26,000	
50,000 "	" .34	......	17,000	$59,800

Here is what it cost the Forest Service:

350 cases	@ $ .0714	....	$ 25	
2,000 "	" .05	....	100	
50,000 "	" .0025	....	125	
			$250	
Freight and handling		....	100	350
Net savings		....		$59,450

THE DESERT GIVES TO THE FOREST

By J. A. Larsen, Priest River Exp. Station

The high winds from the west every once in a while rake up the arid soils along the Columbia River and the Snake River Desert and lay it on every library table and in every pantry in northern Idaho and northwestern Montana; a pest to painters and housekeepers. Mr. Peterson, writing in Science, February 27, 1922, states that the deposit each year at Pullman, Washington, is considerable and would amount to over two inches for each 100 years. I know personally that one such storm in March, 1917, laid down on the snow about 600 pounds per acre within the western white pine region in northern Idaho. Even at an elevation of 6,000 feet, on the Kootenai-Priest Divide, this dust clung to the trees all summer. This natural process of deposition has made the rich Palouse farming region. More than this. It is the writer's firm belief that the wonderfully deep and rich forest soil found over the St. Joe and Clearwater Forests, which is an important factor in growth and distribution of western white pine, has been enriched in this manner.

WASHINGTON NOTES

Financing Fire Fighting in the National Parks: The act making appropriations for the Department of the Interior for the fiscal year ending June 30, 1923, contained the following provision:

"For fighting forest fires in national parks or other areas administered by the National Park Service, or fires that endanger such areas, and for replacing buildings or other physical improvements that have been destroyed by forest fires within such areas, $25,000; Provided, That these funds shall not be used for any precautionary fire protection or patrol work prior to actual occurrence of the fire: And provided further, That the allotment of these funds to the various national parks or areas administered by the National Park Service for fire fighting purposes shall be made by the Secretary of the Interior, and then only after the obligation for the expenditure has been incurred, and the Secretary of the Interior shall submit with his annual estimate of expenditures a report showing the location, size, and description of each forest fire, together with the number of men, their classification, and rate of pay and actual time employed, and a statement of expenditures showing the cost for labor, supplies, special service, and other expenses covered by the expenditures made from these funds."--L.W.K.

A Request for 500 copies of "Longleaf Pine" (Department Bulletin 1061) has been received from V. H. Sonderegger, Superintendent of Forests, Louisiana, who writes that he wants them to distribute throughout the State, placing them in the hands of lumbermen, associations, and individuals interested in our forestry campaign.

The Report of the Forester will be released on December 19.

FOREST PRODUCTS LABORATORY

Spark Arrester Study: The work so far done on spark arrester and ash pan equipment and conditions relating to their use, is being put in final shape for mimeographing. The report includes all the essential information collected on this subject during the past two years and will constitute about 60 pages and 33 photographic prints of arrester and ash pan equipment.

It will be recalled that the study was undertaken to correlate through correspondence and personal interviews comprehensive information relating to front-end arrangements and ash pans for common carrier locomotives and logging locomotives, and spark arresters for donkey engines, loaders, skidders, portable sawmills, and tractors. The information has been obtained from many sources and is expected to be useful in effecting a material reduction in the number of forest and other fires.

This report will be made available for suggestions and comments, and the use of the Districts, State Foresters, and a limited number of others, prior to the opening of the next fire season.

It is not thought advisable to offer this report for publication as a Department Bulletin until certain further tests on spark arrester equipment have been carried on.

Ozone for Lumber: Hundreds of millions of dollars saved and superior production at less expense are among the advantages claimed by the French inventor of a new process of seasoning and drying wood by ozone.

Apparently all that is needed in this new method are electricity, hot air, and ventilation. According to the inventor "the ozone oxydizes and resinifies all the organic matters, keeping to the wood its natural condition, its elasticity, its resistance, and opposing to all outside agents and to humidity in particular a barrage which is impossible. Moreover, case-hardening, checking, and warping are impossible."

The magazine "Lumber" while admitting that the system may have merits, says, "However, until the ozone system can be applied to American wood species and the regulation of system determined to serve those individual species to their best advantage, the process must remain a 'theory' from the American standpoint."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

One Hundred and Twelve Summer Home Sites Available on the Pike National Forest

The above was the title of an article which appeared in the Denver Post on the evening of November 14, largely as a "feeler" to see just what the demand is going to be for these home sites. The Office of Lands has been besieged with people interested in this and there have also been many telephone calls, and so far everybody has been taken care of. It looks as though we will have no trouble to dispose of all we can get ready for the market.

Visitors from the Washington Office: Assistant Forester Headley and C. E. Rachford, Inspector of Grazing, recently spent a week in the District Office on inspection and conference, and considerable time was taken up in conference with Supervisor Philips and Rangers of the Pike Forest.
Mr. and Mrs. W. R. Chapline were also visitors for several days.

Seed Collecting in D-2: Forest Planting Assistant Schrader of the Monument Nursery supervised the collection of 160 bushels of Douglas fir cones on the Pike Forest this fall, from which 185 pounds of clean seed were secured. The cost of this collection was $1.55 per pound. Several seed collectors in the State offered to collect seed at $2.50 to $3.00 per pound, so that a considerable saving was effected.
The Forest Service has been attempting to interest private parties, located in or adjacent to the Minnesota Forest, in the collection of Norway pine seed. There is a large market for this species of seed, and as the seed years are very infrequent, the price increases after a poor seed year to as much as $15 per pound, which is now being charged by seed dealers. The Forest Service has several hundred pounds which were collected in the fall of 1920 at a cost of $3.44 per pound, and it is necessary to guard this seed as faithfully as a keg of gold coins. Since nurserymen and State organizations have found out that this supply of seed is on hand, the Service has been besieged for any quantity of it, but none has been given out since all of the seed is needed for our own use in the Lake States Forests.

DISTRICT 3 - SOUTHWESTERN DISTRICT

A Big Road Project: Construction work on the Clifton-Springerville road on the Apache National Forest is progressing fairly well. This road is 95 miles in length and is estimated to cost in the neighborhood of $600,000. Greenlee County has already completed 31 miles of the project at a cost of around $300,000. The part now being constructed is the Government section of the road in Greenlee County, which is 44 miles in length. About 10 miles were completed this year. Work is now being done in the vicinity of Stray Horse Divide. The most difficult work is now over with and the balance will progress more rapidly and should be completed by early fall 1923. This road traverses the heart of the Apache National Forest in north and south directions. It was the first road applied for under Section 8 of the Federal Aid Road Act of 1916, and had been agitated by the Forest Service and Greenlee County since 1914. When completed, this road in scenic attraction will excel any other in the State of Arizona, and besides its value to the State and county in furnishing a north and south route connecting their main highways, it will greatly simplify Forest administration and fire protection.

Fire Education: This is the time of year to get acquainted with the district school teachers - if the acquaintance is not already well on the way. A good excuse for a social call is the State Insurance Department Booklet, "Fire Prevention and Forest Protection," sent to the schools last spring as a text book. Before the next fire season every teacher and every pupil should be wise on fire protection, and forest officers may find it a pleasure as well as a duty to know what is being done.

Foreign Travel: Deputy Supervisor F. L. W. Grubb, of the Coronado, is on his projected trip to the Cananea region of Mexico. He is gathering data in that neighboring grazing country for Range Appraisal purposes.

Streamflow Control: The city of Bisbee, Arizona, is much concerned over the need of a forest cover as protection against floods, which have caused considerable damage during the past few years. Responding to a request from the Secretary of the Bisbee Chamber of Commerce, Dr. Forrest Shreve, president of the Arizona Forestry Association, accompanied by Supervisor Calkins, visited Bisbee on November 15 to confer on ways and means of meeting the situation.--Coronado.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Inter-Forest and Inter-Ranger District Visits: The period, 8-16-8-29, was spent with Supervisors McQueen and McGowan making a trip over the Humboldt Forest. For the purpose of utilizing the Supervisor's time to the best advantage, the Rangers on the Forest were assembled in groups, three of them meeting the Supervisors at Gold Creek, three at Jarbidge, and two at Lee on the Ruby Division, and two at Paradise and Rebel Creek on the Santa Rosa Division. This arrangement gave each of the Rangers an opportunity to be with the visiting Supervisors for a period of two to three days. During the day time we made trips in the field discussing conditions on the ground. This seemed to bring up many points for discussion that would not otherwise have received consideration and from which we believe the Rangers received most direct assistance. In the evenings after supper about a two-hour conference was held in discussing working plans, standards, and policies in general.

The Rangers all seemed to take a great deal of interest in all discussions and we feel that through this trip we have accomplished many of the benefits that can be secured by a much more expensive ranger meeting. I am sure that the Humboldt force has benefited very materially from the visit.--Favre.

Teton Fire Trespasser to be Held for Trial: Telegraphic advice from the Teton to-day indicates that the ex-Park Ranger who carelessly caused a 500-acre fire on the Teton about October 13 has been given a hearing before the United States Commissioner at Cody, Wyoming, and has been bound over to the Federal court for trial. A bond of $1,000 is mentioned. This is one of the most flagrant cases of carelessness with fire that has occurred in District 4 this season, and the Forest officers on the Teton are entitled to much credit for securing evidence and prosecuting the case so successfully thus far. We feel that a conviction under the Federal Fire laws will be secured.

Wonderful Undeveloped Opportunities: A letter has been received in the District Office from Mr. Mathew Hale of Washington, D. C., who spent in the neighborhood of three months in the National Forests of southern Utah during the past summer. It reads, in part, as follows:

> "It seems to me that you have the most wonderful undeveloped opportunities of any State in the Union. I can not understand at all why so few Easterners are familiar with Utah and with the forests in Utah. I am sure that if it were advertised as it should be in the East, there would be as many or more people going through Utah as are now going through the Yellowstone."

DISTRICT 5 - CALIFORNIA DISTRICT

Visit from Dr. Suzuki: Dr. Suzuki, of the University of Japan, recently visited the District office in quest of information regarding planting, field practices, eucalypts and Monterey pine. Dr. Suzuki is professor of silviculture at Tokio and told how economic pressure on small and large

Visit from Dr. Suzuki (Cont.)

owners alike compelled the practice of forestry. Most of the land is clear cut and then planted, and a 30-year rotation is not uncommon. Thinnings take place regularly and often, and material if straight and 3 feet long is merchantable to as low as an inch in diameter at the small end. The State forests amount to 400,000 acres and the largest owner of land holds nearly 100,000 acres, eight or nine logging operations being supported continuously.

Believe Cutting of Tree Caused Deaths: Residents of Oyama-machi, a shop district of Tokio, being awestricken by a series of deaths among shopkeepers, consulted fortune tellers as to the cause of their calamities. They were told that the deaths were caused by the "spirit" of a gingko tree "angered by the cutting down of another gingko tree in the neighborhood." According to the story the male gingko tree, which was accustomed to meet clandestinely the female tree, was cut down to make room for the monopoly bureau, and its "spirit" in rebellion, avenged itself upon the shopkeepers of the district by causing a series of five deaths among them.

Something Different: Rather a new phase of the fire game appears in a case reported from Santa Rosa. A young man, whose name the authorities decline to reveal, visited the office of the District Attorney and confessed that several years ago he accidentally set fire to a forest on Mill Creek near Healdsburg, doing considerable damage, and that he now wished to reimburse the property owners.

"But Don't Go Near the Water": In connection with law enforcement, it might be interesting to know that the Angeles Forest has this year made 9 arrests and secured 9 convictions for wading and bathing in streams on that Forest. Since most of the streams from the Angeles are used for domestic purposes the State laws in this respect are enforced rigorously.

DISTRICT 6.- NORTH PACIFIC DISTRICT

Reaching the Public: Out of the several thousand persons registering at the Department's exhibits in D-6 this fall, 393 requested copies of 1,110 different Farmers' Bulletins. The names, addresses and numbers of bulletins asked for were forwarded to the Division of Publications of the Department. In addition to this several thousand copies of Forest Service fire prevention and recreational maps and publications were distributed. A careful watch was made of the grounds and not a single copy of a Forest Service publication was found that had been thrown away; in view of the mass of "free literature" distributed at fairs this fact is considered significant.

A Working Map: Ranger Smith Taylor of the McKenzie District, Cascade, had about 40 men working under his direction during the past season. In order that he could keep in touch currently with their whereabouts, he used a map on which was shown from day to day the location of the various protective men and road and trail crews, by numbered pins. Each man in a crew, as well as each protective man, had a number and in the event any man was sent to a fire or was moved away from his regular location, the pin was changed to indicate his location. The merits of this system from a fire protection standpoint are obvious.--A.O.W.

This is Utilization: During the summer of 1922, Rangers and short-term men on the Umatilla Forest cut some 300 cords of wood from trails and clearings on road rights of way on that Forest. This wood will be floated down the Walla Walla River to Milton, Ore., from which place it will be hauled to Walla Walla and sold, being handled under regular timber sale procedure.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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RECLASSIFICATION OF THE FEDERAL CIVIL SERVICE

by

Col. W. B. Greeley

(Extracts from a talk before the National Civil Service Reform League)

Reclassification has often been referred to as a measure of justice to Federal employees. It is nearer the truth to term it a measure of justice to the American public whom the Federal employees represent and serve. The interests of the individual worker are not, in my judgment, the primary consideration at stake. We may quit the service of a bad employer when we have stood all we can. The real issue is the degree of efficiency with which the duties of the Federal Government are discharged and with which the interests of the general public are handled.

Any day in Washington you may find seated on two sides of the same table an employee of the Income Tax Bureau and an attorney or expert representing some corporation. They are fixing the taxes properly payable on the business of the corporation. The lawyer or corporation expert probably will receive as much for his single trip to Washington as the representative of the Treasury Department receives for his entire year's services. The issues involved in their conference may run into many thousands of dollars. The man who sits on the Government side of that table represents every Federal taxpayer in the United States. Upon his integrity, upon his understanding of the law, upon his ability to deal efficiently and squarely with the issues of the particular case rest the interests of every one of us who contributes to the Federal Treasury.

You must duplicate that conference a thousand times a day, in a score of different Federal services, at points all over the country, some of them dealing with taxes, some with customs, some with the disposal of Federal resources, some with the adjudication of Federal claims, if you would form an accurate picture of the extent to which the interests of the American public are represented for good or ill by the men and women who fill these Federal services. So I say again the real issue in the reclassification of the Federal Civil Service is not justice to the employee but justice to the American public.

The exhaustive report made by the Congressional Joint Commission on the Reclassification of Salaries shows plainly enough for the satisfaction of anyone that the Federal Government has never had an adequate system either for the standardization and control of the salaries of its employees, for the control of the kind of service secured under each grade in compensation, or for the adjustment of rates of pay to changes in living costs. The present personnel situation in the fifty odd separate establishments of the Federal Government, as brought out by the Joint Commission, can hardly be described in any other term than "confusion worse confounded." Some Federal organizations, carried mainly on lump sum appropriations, have been given wide latitude by Congress with consequent ability to meet and adjust personnel situations as they arise. Other Federal organizations have been bound down, like Prometheus to his rock, by inflexible statutory schedules of compensation fixed years ago. I am trying to administer the 149 National Forests on a statutory schedule of salaries for Forest Supervisors and Forest Rangers which was fixed in 1910 and has remained practically unchanged ever since, except for the bonus of $240 yearly payable to employees receiving less than $2,500. Since these statutory rates of compensation were fixed, the average living cost advanced to over 100 per cent in June 1920 and now has apparently settled for a time at around 60 per cent above what it was when these rates of pay were established. Since that time the responsibility of the field officers on the average National Forest has more than doubled; but we must go right on trying to protect public property and give the public efficient service under this ancient schedule of compensation which has been the graveyard of the Forest Service, as it has of many another Federal organization.

Perhaps the most damning evidence of all as to the actual standing of the Federal service is the fact that its scientific and technical positions are no longer sought by college trained men to anywhere near the same degree as formerly; that there has been a distinct dropping off in the infusion of new blood in well trained men without which any organization sooner or later drops into a rut and becomes a group of Federal job holders. Returns were presented to the Joint Commission from forty colleges and universities, almost all of whom reported that their best students no longer consider Government service as a possible field of employment and that the number of graduates who enter the Government service is declining. Some American colleges even said in plain words that they advised their students to keep away from Government work because of the unsatisfactory employment conditions which it offers.

Now the Government Printing Office produces an ample supply of resignation blanks. Speaking for the greater part of my associates in the Federal service, we can take care of ourselves. We can drop out, as we are doing, when the sacrifices become too great to be endured with self-respect. But the American public can not afford to have its 300,000 civil employees attempt to perform their work under such conditions. The American public can not afford to imperil the success of the essential functions assumed by the Government in its behalf through poorly trained and inefficient personnel. Solely from the standpoint of giving good service to the people of this country in the many functions of their Government, I doubt if any administrative problem exceeds in importance or in its immediate urgency that of an adequate classification of the Federal personnel and an adequate standardization of its salaries.

Such reclassification of Federal personnel has been actively before the American public for nearly four years. Here in Washington we have expended a prodigious amount of work and thought upon it. We have dug out of the records of the Federal Government all that is necessary for the framing of adequate legislation. The actual facts and conditions have been so clearly stated in authoritative reports that they can not be questioned. If we are ever going to get action in this matter, the time for it is right now.

A PROPHECY FULFILLED

"The great American nation - which individually never shuts a door behind its noble self - very seldom attempts to put back anything that it has taken from Nature's shelves. It grabs all it can, and moves on. But the moving on is nearly finished and the grabbing must stop; and then the Federal Government will have to establish a Woods and Forests Department the like of which was never seen in the world before! And all the people who have been accustomed to hack, mangle, and burn timber as they please will object, with shouts and protestations, to these infringements of their rights."--Kipling - "From Sea to Sea" - 1899.

by Frank A. Waugh

It may be interesting to notice that Mexico had National Forests and forest laws before the United States. I have not determined when the first forest law was passed, but it was long prior to 1856. At any rate, on September 19, 1881, a new law superseded the old, and this new law rather elaborately presented some of the principles which are now well recognized in the control of our own National Forests.

To illustrate this point the following extract is made from the law describing the "duties of agents." (An agent was apparently an officer standing somewhat between our present Supervisor and the Ranger.) Amongst other duties the following were prescribed:

1. To issue the permits which may be solicited for the cutting of the trees, expressing with clearness and exactness the number of them and the situation of the place where the cutting must be done.
2. To receive the total value corresponding to the number of trees which have to be cut.
3. To examine what are the woods and lands of national property which there may be in the State and to communicate them to the Department of Public Works in order that the necessary provisions may be dictated so that the public treasury may enter into possession of them.
4. To secure proofs of trespass and present them before the judges.
5. To prevent friction between timber cutters on adjoining lands.
6. To impose and make effective a fine of six dollars for each tree which shall be cut without authorization.
7. To impose on the public inspectors and forest keepers of fines even to a third part of the salary which they enjoy when they do not fulfill the obligationswhich in this regulation are imposed upon them; and they may also remove them.
8. To propose to the Department of Public Works what the cutters ought to pay for each tree that they cut, establishing the reasons which they may have for proposing the price which shall govern, etc.

THAT PENCIL WASTE

One is sometimes convinced that the faculty of straining at a gnat and swallowing a camel was not confined to the Pharisees. In a recent issue of the Service Bulletin a writer attempted to prove that $1,000 is wasted annually on pencils. This article contained approximately three hundred words. I don't know how long it took the author to write it, what his wages are, or how much ink it took to print it and what it cost, or how long it took to print the article, cost of paper, etc., so that these items can not be included in the following observations. But applying mathematics to the figures given by the author of the article on pencil waste, it would take 4,915 minutes for all members to read the article and it would then take 49,150 minutes or 820 hours for the minds of the readers to return to normal and become available for concentration on ordinary daily work. The average rate per hour of all workers in the Service is approximately $.85. It is therefore apparent that reading the article cost approximately $657.00 which, at the best, would leave a net saving of only $343.00, and I doubt not that this amount is yearly contributed to the Service by those who frequently furnish their own pencils.--F.G.

A RADIO TRANSMITTER

By R. B. Adams, Missoula

Besides the use of radio where it can be used in our regular communication problems, there is another very interesting possibility where it can be employed in the National Forests, and that is in the form of navy radio compass. I have tried this out myself and the tests were quite satisfactory. Before showing its application to Forest Service work, it is necessary that we understand that with the radio compass it is possible to tell the exact direction from which a radio wave is coming.

As we all know, there are times when a smoke chaser goes out on a fire in the heavy timber and at times it takes him as long as two days to find the fire. There has been designed, and is available, a small portable transmitting and receiving telegraph set, which complete will weigh not to exceed 4 pounds. This set has quite a long receiving range, the transmitting range being, with telegraph, probably not to exceed 10 or 12 miles. Greater distances, however, could probably be obtained from it by the use of additional power, but it is desirable to get away from this additional weight. By providing the smoke chaser with one of these sets, about one measured strand of light emergency wire, and two additional measured strands of emergency wire, the former to be used for antenna and the latter for counterpoise, it would not be necessary for the smoke chaser to have any great amount of knowledge to set up this small piece of equipment. A battery has been provided that with the addition of a little spring water, sufficient power to transmit for one hour is available. The smoke chaser, knowing the period that the lookouts, which are provided with both telephone sets and the radio compass, are on duty, cuts in at one of these periods and by means of a pre-arranged code asks the lookout man where he is in relation to the fire. The lookout man talks back to him by telephone, repeating any message that he has asked, and tells the smoke chaser to stand by for a moment. Then, as soon as the lookout man is ready with his compass set he tells the smoke chaser to press his key down and leave it down so that a buzz will go out for approximately 45 seconds or a minute, or a sufficient period to make it possible for the lookout man to locate the source of this buzz. If two lookouts are available, both equipped with compass sets, it is possible for the smoke chaser to be located by means of triangulation just as accurately, if not more so, than it is possible for lookouts to locate a fire by means of our modern map boards and alidades.

FOREST SERVICE PERSONNEL, JULY 1, 1922

	District										Total		
	1	2	3	4	5	6	7	8	Lab.	Wash.	Stat.	Misc.	Total
Administrative	12	12	12	9	12	13	9	3	4	37	10	113	123
Logging Engrs & lumbermen	7	5	5	.	6	4	.	.	.	1	..	28	28
Forest Ex. & Forest Assts.	28	18	11	7	21	29	16	1	5	6	..	142	142
Grazing Ex. & Grazing Assts.	3	3	8	11	3	4	..	.	.	.	..	32	32
Other tech. assistants	28	7	11	3	12	7	9	5	102	16	12	188	200
Forest Supvrs.	27	32	22	35	22	29	13	2	1	..	135	48	183
Deputy Forest Supervisors	15	7	10	14	12	12	5	4	.	..	73	6	79
Forest Rangers	183	168	135	182	132	151	57	6	.	..	990	24	1,014
Scalers	12	..	3	..	19	9	..	.	1	..	..	44	44
Clerks	76	65	57	60	63	62	25	6	47	105	510	58	568
Draftsmen & Surveyors	18	11	12	14	15	13	9	1	2	27	90	32	122
Subclerical	6	5	15	6	7	4	8	.	23	40	67	47	114
Skilled trades	2	.	..	.	.	.	.	..	18	6	10	16	26
Forest Guards	702	42	128	150	414	641	163	.	..	.	..	2,240	2,240
Total	1,121	375	429	491	738	978	314	28	203	238	1,897	3,018	4,915

WASHINGTON NOTES

The Solicitor has informed the Washington office that there is not in existence any Departmental regulation based upon a specific Federal statute which requires that only American citizens be employed in the construction of roads. Likewise, in the road acts appropriating funds for both post roads and forest roads, no specific restriction is mentioned as to the employment of noncitizens in construction work.

Certain States have laws which provide that all contractors comply with restrictions regarding employment of labor; and in those cases where the State handles the construction of a cooperative forest road project, the employment of aliens by the contractors can be prohibited.--G.H.L.

The Holiday Issue of the Breeder's Gazette contains an article, "The East as Seen Through Western Eyes," by Will C. Barnes.

Forester's Report: Two copies of the Forester's Report have been sent to each Forest. The report is a complete statement of the work that has been done and what is needed to be done in each branch of the Service, and the information it contains should be in the minds of all of us. There is no better, in fact, hardly any other, means of getting and keeping in touch with our work; the policies governing it, and its problems.

Means to an End: Extract from a letter. The "land classification notebook," promised by you in a recent letter and which I reported had not been received, has shown up. I wanted to report it so as to relieve the mailing clerk ("who thought he had sent it") of any responsibility in the premises. He did mail it. One of my kids thought the package looked interesting, swiped it pro tem and just brought it out. I've spanked the rascal with the compliments of the mailing clerk.--P.S.Lovejoy.

FOREST PRODUCTS LABORATORY

Scientific Writing: "By means of a pedal attachment, a fulcrumed lever converts a vertical reciprocating motion into a circular movement. The principal part of the machine is a large disc that revolves in a vertical plane. Power is applied through the axis of the disc, and the work is done on the periphery."

Who, after a careful reading of that, would know that the writer was describing a grindstone?

Paper Umbrellas and Fords: Another use for paper has been discovered in the recent announcement of a manufacturing company that it has perfected a waterproof umbrella. This article is composed of two inverted cones mounted on a stick, waterproofed by a secret process, and built to withstand a thirty-mile gale. The inner cone, which is smaller than the outer one, takes the place of ribs in an ordinary umbrella. The entire article is prepared to retail at twenty-five cents, and although primarily a "one-trip" umbrella, will, it is claimed, stand repeated use. Detroit is responsible for rumors calculated to make one believe that the new Fords may be papier mache. Glue, cotton, and formaldehyde are some of the elements mentioned as composing this substantial material. The Germans have experimented with this idea for a long time and have utilized an improved papier mache in carriage making. They use an impregnated wood pulp, owing to their lack of cotton.

DISTRICT 1 - NORTHERN DISTRICT

Another Old Score Settled: The case of the United States v. Dover Lumber Company, involving a fire trespass on the Cabinet National Forest, was tried in the Federal District Court at Coeur d'Alene, Idaho, on November 28 and 29, and resulted in a verdict in favor of the Government in the sum of $2,668.12. The Government sued for $10,806.57, the value of timber destroyed and costs of suppression in connection with a fire which occurred in the summer of 1919 through the defendant company's negligence in burning brush upon a timber sale area.

In the early spring of 1919 the Forest Supervisor had repeatedly requested the company to pile the brush and burn it under the supervision of a Forest officer. Disregarding these instructions, the company burned both piled and unpiled brush without the presence of a Forest officer, as a result of which the fire escaped from its control. Twice the fire was brought under control by the Forest Service and the company allowed it to escape through failure to maintain an adequate patrol.

At the trial, both the value of the timber and the expense of suppression were admitted and the case was tried squarely on the issue of negligence in respect to the setting of the fire and the failure to properly patrol it after it had been brought under control. The verdict appears to have been a compromise of the conflicting views of the jurors as to the company's responsibility."

Looks Like a Fair Price: The Forest Service is offering for sale on the Coeur d'Alene National Forest 17,700,000 feet of timber on Uranus Creek near Prichard, Idaho. This is considered an exceptionally desirable chance, since it is estimated to contain 93 per cent white pine, and is so located that the logs can be transported by chute to the North Fork of the Coeur d'Alene River. The timber is being advertised at a minimum rate of $8.50 per M for white pine and $.50 per M for white fir.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Christmas Trees: Agitation against the cutting of Christmas trees has again been started by nature loving enthusiasts in Denver; but they seem to agree that the cutting of trees under regulations, in the way in which the Forest Service does it, is satisfactory. Articles have been printed in the local papers describing the methods employed by the Forest Service.

Detailed to District Office: G. M. Hunter, Deputy Supervisor of the Holy Cross, and C. B. Mack, Deputy Supervisor of the San Juan, have been detailed to the District Office this winter to work on the study courses, and H. D. Cochran, Forest Assistant of the White River, will be in the Office of Public Relations.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Lumberman Lang is on a several weeks detail to the Forest Products Laboratory at Madison, Mr. Lang will take up particularly the subjects of kiln drying, utilization of inferior species and of material wasted in the woods by logging operations, destructive distillation of wood, pulp manufacture, etc., with particular reference to their bearing upon D-3 conditions. Mr. Lang will also secure all available information on turpentining, since, if the turpentining industry materializes in the Southwest as it now seems possible, Mr. Lang will doubtless be the District turpentine expert.

Many Beneficiaries: It is said there are 5,500 agricultural users of water from the Roosevelt reservoir in Arizona. Families and business enterprises that enjoy cheap electricity from the water power made possible by the Roosevelt Dam number many thousands. Continued success of the Roosevelt project depends largely upon protection of the watershed by the Tonto National Forest, but the administration of the watershed area in no sense sets up a reservation or withdrawal from public use. On the other hand, it approaches so nearly highest and wisest use that protection by the Forest Service is accomplished without a charge that is directly attributable to the reclamation of the extensive desert lands of the Salt River Valley. The Tonto Forest pays its own way one year with another.

All Kinds of Savages! "Speaking of the recent election, the following is taken from a report concerning range improvements: 'I wish it clearly understood that if there is a possibility of getting any boundary fencing done this year, I am willing that all improvement money be diverted to this fund. I have approximately 60 miles of savage frontier on this district that is being constantly attacked by trespassers of every kind known to a Forest ranger.' (We note that among other things there are five different tribes of Indians outside his boundaries.--Ed.)"

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Fires in Mountains Adjacent to Ogden: This fall we are again reminded of what would be taking place upon all the mountain ranges of this entire region if it were not for the Forest Service. In one of the gulches in the mountains adjacent to Ogden a fire has been burning for several days, covering the mountains with smoke. There is considerable large timber in this gulch which is visible from town, and the brush must be full of small seedlings and saplings which will readily fall victims to the fire. The location is near the edge of tree growth, where it is very hard to get new trees established on account of the dryness, and this fire which is counted as a harmless brush fire by the majority of the people who see it burning is in reality destroying in the course of a few days all the progress that has been made toward reseeding this area in the last 25 years. If this were on a National Forest, the fire would have been out before it had really started, and the chances are the persons responsible for it would be under arrest.

Note: The fires above mentioned was extinguished by Troop 2, Boy Scouts of Ogden, under the supervision of their Scoutmaster, Mark Fuller. Arrangements have since been made to have Scouts trained for fire-fighting, and to have them extinguish all future fires in the mountains east of Ogden. The Scouts will have the cooperation of the Forest Service in this training. The Ogden Kiwanis Club is cooperating with the Forest Service to keep fires out of these mountains.

Extract from Wasatch Forest History: In the early days of the Bureau of Forestry, Morgan Parke, then a boy, and his father were cutting and skidding logs in yellow pine grove, when Supervisor D. S. Marshall happened to ride up. The Supervisor stopped and in a firm businesslike manner inquired:

"Who gave you authority to cut this timber?"

The old man was rather surprised, as cutting of timber on the great free outdoors had never before been interfered with; he hesitated a moment and replied:

"God Almighty."

The Supervisor said: "Well, go to it then, He's my superior officer," and rode on up the canyon. Later, however, he returned and fixed up the timber sale in regular order.--W.G.M.

DISTRICT 5 - CALIFORNIA DISTRICT

Western Planing-Mill and Wood-Working Congress: Through the District Office of Forest Products, and with the cooperation of the Forest Products Laboratory, the Forest Service is making constantly-increasing contributions to the efficient utilization of wood in this State. From November 23 to 26 there met in San Francisco the first congress of the Western Planing-mill and wood-working industry. This was a remarkable meeting and will accomplish very much good for the industries represented. About 150 delegates were present from the entire Pacific Coast, including British Columbia, and from States as far east as Colorado. Mr. Hill, of the San Francisco office, addressed the convention on the subject of kiln drying, while two other addresses were given by Mr. Truax of the Forest Products Laboratory; one on glues and gluing and the other on veneer and plywood. The interest in these technical addresses was remarkable and a great deal of good, it is believed, will result for the Forest Service as well as the industries addressed, in the better knowledge of these industries and the Service and what it is doing for the nation. This congress was fathered by Mr. George M. Cornwall of the TIMBERMAN, who was also responsible for the start of the Pacific Logging Congress, and who has been a consistent friend of the Forest Service. The congress passed a number of very fine resolutions respecting the Forest Service, the Forest Products Laboratory and the practice of forestry, which will be printed in the News Letter as soon as they are available.

Summer Camp to be Model for Nation: The Oakland Municipal Recreation Camp in the Stanislaus National Forest "may become the model for the nation as well as for other municipalities," according to Stephen H. Mather, Director of the National Park Service, who was a recent visitor to this Forest.

This camp is described in a story in an eastern magazine by J. B. Nash, Superintendent of Recreation of the city of Oakland. It is situated in the Sierra Nevada Mountains on the Tuolumne River, 152 miles from Oakland and 3,500 feet above sea level. This season about 3,200 people were accommodated during the 17 weeks the camp was in progress. The Oakland camp is for the benefit of the citizens of that city, and is divided into three sections, one for children, one for adults, and the third for automobile parties. Board, including tent accommodation, is $6 per week for grown-ups and $5 for children under twelve. Each person gives an hour's service a day toward camp duties. Transportation and furnished tents are provided by the city, but the campers furnish their own blankets. The food is prepared by a competent chef, and is well cooked and wholesome. This is one of twelve municipal camps which are now being operated in the National Forests of California.

That's What All Fires Are: The following was copied from a voucher recently received from the Angeles: "To hire of automobile for use on Heleva Fire; 5 hours at $3 per hour--$15.00."

DISTRICT 6 - NORTH PACIFIC DISTRICT

Material Appreciation: Another important donation to the Eagle Creek Forest Camp near Portland this season was a porcelain drinking fountain, which was donated by the Walworth Plumbing Company of Portland. The Walworth Company gives its employees an annual picnic each Labor Day at the Eagle Creek Camp Grounds, and in appreciation of what the Forest Service is doing for the public in providing such convenient camp grounds this gift was made. It had been placed at the entrance to the Eagle Creek Trail and few hikers pass it up, as a large liberal flow of fine spring water is always gushing forth.--A.W.

The Fremont in Congress: Post-election reports show that Scott Leavitt, formerly Ranger on the Fremont and later Supervisor in D-1, and more recently a good-roads booster of Montana, is now a Congressman. Mr. Leavitt ran on the Republican ticket from the second Montana district.

Romance on the Santiam: Collier's Weekly for October 28 carries a Forest Service romance called "In the Sticks." Its scene is laid on the Santiam National Forest, Oregon. A fire dispatcher is the hero, and the Forest fire plan figures rather prominently. Supervisor Hall appears in the story, under his right name, and of course there's a forest fire and an old mine. The author is Charles Alexander, editor of an Albany, Oregon, newspaper. The story is very readable and the author has his Forest facts pretty accurate.

DISTRICT 7 - EASTERN DISTRICT

Two Beneficent Showers after Forty Days and Forty Nights without rain have temporarily lessened the grave fire danger on the Shenandoah Forest; the outlaw has by no means been handcuffed and subdued, however, and intensive protective work is still the order of the day. The smoke from fires on the Blue Ridge and Alleghanies hangs like a heavy pall over the landscape, confining the range of vision to a scant two miles and making it necessary for the lookouts to leave points of vantage and go on patrol; emergency men are tramping remote trails in places almost choked with the dry leaves piled high by sudden gusts of wind. The local people by their hearty spirit of cooperation are not only giving tangible proof of their friendship for the Forest Service, but are helping to minimize the menace.

Service Bulletin

U. S. FOREST SERVICE

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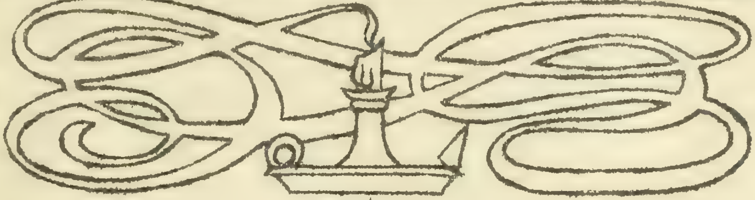

The New Year is at the door; the season of yule logs and fat turkeys, of stockings hanging beside glowing fireplaces, and Christmas trees a-glitter with tinsel. The years are each an opportunity for achievement; for the gaining of designated objectives and the setting up of new ones to be gained. They go their merry round and the Service work keeps pace. We are one big brotherhood of workers, and so in this Yuletide of the Year of 1922 we of Washington wish you, our Comrades of the Field, A Very Merry Christmas and a Happy New Year. Our hands and seal attest.

W. B. Greeley

E. A. Sherman

Herbert A. Smith

Roy Headley

Will C. Barnes

Earl H. Clapp

Raphael Zon

Ward Shepard

J. Kittredge Jr

Wm. A. Dayton

Paul D. Kelleter

C. R. Tillotson

W. R. Mattoon

Thomas H. Gill

W. R. Chapline

W. W. Ashe

R. F. Eldridge

Geo. B. Sudworth

J. G. Peters

C. H. Squire

CONTINUOUS TIMBER OPERATION HOLDS DOWN INJURIOUS BUGS

By E. E. Carter, Washington

The bug (Dendroctonus) infestation on the Kaibab Plateau and the death of some seed trees left on sale areas on the Coconino Forest have combined to make the Forest officers on the latter Forest apprehensive in regard to the beetle situation. During the past fall the Service was fortunate in securing the detail of W. D. Edmonston, of the Bureau of Entomology, to look over the Coconino. His report, just received from the Bureau of Entomology, is most reassuring. No serious insect epidemic exists or seems likely to develop, and he attributes this condition very largely to the continuous cutting on the Forest. He says the beetles are attracted to the felled timber. Under the methods of operation on the Coconino the logs are hauled to the mill fairly promptly and the beetles are destroyed in the process of lumber manufacture, going either to the boilers or the burners with the bark and refuse.

Just how far away from the present cuttings this attractive influence extends is not known, but there is nothing alarming now on the Coconino, even in the old virgin pine stands 20 miles or more away from present operations.

Score one more point in favor of a continuous cut under regulation.

SENTIMENT IN THE OLD-TIME WOODSMAN

By R. H. Weidman, Priest River Exp. Station

Many of us live the round of our daily existence as though determined to make it as prosaic and unimaginative as possible. And this even applies to those of us outdoor workers whose privilege it is to move in the noble and inspiring environment of Nature. Perhaps it is not so much a lack of susceptibility to the finer feelings as a suppression of such feelings or a hesitation in expressing them. It is therefore a rare and delightful experience of the mind to discover occasionally fine sensibilities in our fellow workers, the more so when the expression of sentiment is found where we least expect it. It was my pleasure to have this experience some years ago in going over the field notes of a number of old-time cruisers, who had been engaged on a large timber cruising project in the Cascade Mountains of Washington.

The compass lines sometimes took the men out of the commercial timber into the beautiful, alpine country at the higher elevations. The appeal of these surroundings and the response evoked by them show that the senses of these men were not blunted to the artistic in Nature. Their notebooks not infrequently contained additional remarks delightfully interesting in their departure from the regular records of logs and volumes or the usual notes on quality and defect. The nature of these remarks is best revealed by direct quotation from the notebooks.

One of the cruisers, a man 45 years old who had followed his occupation since youth, wrote on the back of one of his tally sheets as follows: "The NE$\frac{1}{4}$ carries the best timber on the section and is more loggable ground. Clean of brush, parklike in appearance, lakes, glades, grasslands, etc., makes it a beautiful spot. Old Mother Nature seemed to favor this spot in the hills."

Among another cruiser's notes was found this appreciation of Nature: "Section 17 to the west of this section also adds to the beauty of this wonderfully clean, open parklike spot. E$\frac{1}{2}$NW$\frac{1}{4}$ shows a series of rock knobs. One gets a fine view of Mt. Rainier and the West Glacier. Some good Samaritan should stock or plant fish in these Mt. lakes and streams. Goat Lake also offers a water power site."

Still another cruiser with a style more literary and facile than the rest wrote in one place as follows: "Rough and craggy; high domes and fantastic peaks. Rock slides, a glacial lake, a saddle, benches and beautifully colored meadows .... For a beautiful, unvisited and almost unknown mountain region, this section excels anything we have yet seen. The high domes and peaks, the highly colored meadows, the small glacial waterfalls in all directions - taken all together afford a fine alpine scene. An undisturbed mountain goat range and deer pasture."

One of the cruisers on this project had a passion for wild flowers, as revealed by his field notebooks filled with pressed specimens of the brightly colored lupine, paint brush, columbine and other alpine species. The compassman stated that this cruiser did not know the names of many of the flowers, nor did he attempt to identify them. He collected them assiduously because he thought they were pretty. When they clogged his notebook, he threw them away; but his book did not remain empty, for he continued to pick new flowers and place them between the leaves as before. This man, who had been a cruiser for 17 years, once told his compassman that he knew hundreds of cruisers, and that there was not one of them who did not possess sentiment in some form or other.

POINTS ON OUR ACQUISITION POLICY

By Col. W. B. Greeley

The Forest Service is giving every aid and encouragement that it can to the growing of timber on private lands in National Forest regions and also to protection of growing timber through the removal or control of the slash hazard. By precept and example, the Forest Service is inculcating the adoption of "minimum requirements" in the disposal of slash, the leaving of small timber and the protection of young growth in the various forest regions. It is natural enough that the viewpoint should be advanced that the Forest Service should further foster the growing of timber by valuing cut-over lands offered in exchange on a basis which will compensate the owner for what he has spent to secure reforestation over and above ordinary logging costs; or that the Forest Service should appraise young tree growth on lands acquired by exchange as a supplemental element of value.

This question connects itself directly with our national reforestation policy, particularly the extent to which the logger should be required, as a matter of law, to leave cut-over lands in a productive condition. It is my viewpoint that the reforestation knot must be cut by asserting the right of the public to require that certain essential things be observed in logging practice. The Nation and the State should cooperate in maintaining a stable system of fire protection; but neither the Nation nor the State can subsidize the practice of forestry by the appraisal of lands acquired for public forests on some basis other than their straight commercial valuation. I believe that the fundamentals of forestry practice, call them "minimum requirements" or what you will, must be met as an obligation running with the land and normally absorbed in the cost of manufacturing timber products - not as an outlay to be reimbursed by public agencies either in connection with land purchases, land exchanges, or any other medium that might be open.

Furthermore, the Forest Service has a very clear business responsibility as the manager of a vast public estate. Our accounting for this property, whether disposed of through timber sales in return for cash or through exchanges in return for land, must stand the same test of soundness and prudence which any court would exact from the executor of a private estate. However keen our desire to promote the general growing of trees, we can not pay people to do so with national property, unless there is a commercial "quid pro quo," a demonstrable commercial value which returns to the Government the equivalent of what it gives.

The valuation of lands for exchange purposes becomes then a proposition on all fours with the valuation of lands in the eastern States for cash purchase. The Forest Service must specify the kind of land it wants. It wants land which is reasonably safe from fire and reasonably stocked with young trees. It will not be greatly interested in acquiring land which does not meet these standards. The next question is, what is such land worth - in the Idaho Panhandle or in eastern Oregon or in northern California? If there is a market in which such land is moving, whether for grazing purposes or what not, the Government must meet that market if it expects to obtain any land. The commercial value of the land is fixed by its local market. If there is no active market for cut-over land, the Government must find out by a process of trial and error at what prices the kind of land it wants can be acquired. If it is evident that some land meeting the specifications can be obtained for $1.00 an acre, it is certainly incumbent upon the Forest

Service to put that down as a $1.00 market and appraise exchanges on the basis of $1.00 land. If it is evident in any particular region that a higher value must be allowed in order to actually get land for building up the timber growing capacity of our National Forests, the sights of the exchange appraiser must be adjusted accordingly. In other words, he must strike as close as he can to the actual land market, to the price level at which a reasonable quantity of the land needed will actually come into the Government's hands.

Admittedly this is a cold and commercial policy. But I believe that any group of business men who study the matter closely will recognize that it is the only policy which the Forest Service can safely pursue and the only policy which the sound business judgment of the country would sustain. A preliminary examination indicates that considerable areas of old cuttings in the western pine belts, which by accident or otherwise contain excellent stands of young pine, are available for National Forest exchanges at a valuation of from $1.50 per acre up. This is desirable National Forest land, particularly desirable because of its well advanced second growth. As long as such land is obtainable, how could the Forest Service justify placing a higher valuation to cover the cost of slash disposal on freshly cut lands whose value for National Forest purposes is no greater and probably less than the class of land first mentioned? Some cut-over white pineland in the Northwest, clean of slash and containing young pine and cedar, has recently been offered to the Forest Service for exchange at a valuation of $1.50 per acre. If such land can be obtained at that figure, how could a valuation high enough to recoup $6.00 or $7.00 expended per acre on slash disposal be justified as a plain business proposition? Once we get away from the commercial basis of valuing land, once we set up the idea that because the Government is acquiring land for a public purpose, it can afford to disregard commercial considerations and put down elements of value which do not exist in the actual land market, the Forest Service will have cut loose from the safe and sound moorings of practical business and the whole land exchange and forest acquisition policy will be threatened with shipwreck.

We will welcome the day when land in the western forest regions which is stocked with young trees is worth several dollars an acre more than land which is not stocked with young trees. We will welcome the day when if the Forest Service wants to buy 10-year old white pine in Idaho, it will be compelled to pay the same commercial value which we would have to pay to-day were we to buy 10-year old white pine in New Hampshire. But we have got to leave the levels of forest land values to economic forces. We can not capitalize into the value of the land the public service which we want that land to render.

FOREST PRODUCTS LABORATORY

Laboratory Has Pulp and Paper Course: Forty-one students are enrolled in the correspondence course in wood pulp manufacture now being conducted by the Laboratory in cooperation with the University of Wisconsin.

The course is based upon a text-book on the preparation and treatment of wood pulp recently issued under the direction of the Vocational Education Committee of the Technical Association of the Pulp and Paper Industry.

Lumbermen Select Basic Books of Their Industry: As a result of an inquiry made by the McAlpin Hotel, New York City, of leading lumbermen, twenty books of especial interest to this industry were selected.

The list has been given in a number of trade journals. Among the books are: Timber, Its Strength, Seasoning and Grading, by H. S. Betts; Some Public and Economic Aspects of the Lumber Industry by W. B. Greeley; The Distribution of Softwood Lumber in the Middle West (wholesale) and the Distribution of Softwood Lumber in the Middle West (retail) by O. M. Butler; Preservation of Structural Timber by H. F. Weiss; The Kiln Drying of Lumber by H. D. Tiemann.

WASHINGTON NOTES

Indeed It Is: A man in Chicago has devised a method by which he can grow figured black walnut. He says that single logs sell for as much as $1200; that logs can be grown in 20 to 25 years on good land, and that there are 35,000,000 acres of suitable land in Iowa and Illinois. In his own words, "figure such trees at 500 trees per acre and it is astonishing." Isn't it?--W.N.S.

The Office of Research is up to its ears in the compilation of "Timber Mine or Crop," which will be available some time in the not distant future and which is said to have the Capper Report backed off the boards for thorough-going analysis of conditions. Keep a lookout for your copy.

DISTRICT 1 - NORTHERN DISTRICT

An Old Timer Retires: Forest Ranger Shelton McPherson, familiarly known as "Rene," has been retired on account of physical disabilities incurred in the line of duty.

Rene had almost nineteen years service to his credit, most of which was spent in subduing the wildest part of the Selway Forest. With all of our development this country is still wild. It is hard to visualize the condition which must have existed nineteen years ago. Certainly it took a man to measure up to it. Rene leaves behind him on the Forest an enviable record of loyal and energetic service and not a small amount of first-hand development brought about by his personal effort. He made the interests of the Forest Service his own. Can any man do more?--F.J.J.

Study Courses: In addition to giving the Manual Review to new members of the Service this winter, District 1 is offering eight elective study courses which cover the following subjects: Forestry, Forest Mensuration, English, Surveying, Grazing I, Grazing II, Organization and Efficiency, and Forest Fire Protection. Registrants are required to purchase standard text-books and each subject will be covered by eight or ten lessons.

Approximately 100 have registered for the elective study courses, and English leads with nearly one-third of the applicants.--C.R.C.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Sheep Reductions: Assistant District Forester, John H. Hatton, recently attended a meeting of the Carbon County Wool Growers Association at Rawlins, Wyoming, which meeting was also attended by Supervisors of the Routt, Hayden and Medicine Bow Forests. The Advisory Board of the Association, after considerable argument and discussion, agreed to a general cut in the number of sheep to be run on the Routt and Hayden Forests beginning in 1923. This reduction will amount to 10 per cent on all outfits over 10,000,8 per cent reduction on those between 6,000 and 10,000, and a 6 per cent reduction in all classes between a limit of 1,250 and 6,000.

It was felt that since such reduction appears to be necessary from a standpoint of the permanency of the range, that now is as good a time as any to make it, although there was considerable discussion on the possible effect of the reduction on credits, most of them being borrowers from the War Finance Corporation. This matter of reduction has been up for several years but has been postponed every year principally on account of the condition of the stock industry. They have sold down closer this year, however, and the cut takes advantage of this shortage.

Outsiders Copying: Mr. Ralph Hall, County Commissioner of Albany County, Wyoming, who grazes sheep 150 miles from the Medicine Bow Forest, follows the bedding out system exclusively. He has determined by bedding his sheep at a new location each night as is required on the Forest, that he secures a large gain in the weight of his lambs over the old system. His sheep are grazed at the head of Sheep Creek, in territory very similar to the lower sheep ranges on the north end of the Medicine Bow Forest. In an average year he found that where his sheep were not bedded out, the average weight was 52 pounds as compared with the usual average of 63-64 pounds. During the exceptionally dry season of this year in his territory, his lambs weighed 59 pounds and he is confident that had they not been bedded out, their weight would not have exceeded 45 to 48 pounds.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Big Sawmill at Bernalillo: Ground has been broken at Bernalillo, and this week seventy teams are expected to be at work on railroad grade construction in connection with the White Pine Lumber Company development proposition which contemplates a thirty or forty million capacity mill at Bernalillo and a railroad into the San Diego Grant and adjacent timber on the Santa Fe National Forest. It is in connection with this operation that the Forest Service has agreed to withhold from advertisement for a five year period units in excess of three hundred million feet of timber on the Santa Fe. It is the company's intention to push construction work and begin to saw lumber at the earliest possible date.

Roosevelt Lake Getting Low: The dry summer and fall over most of the Tonto is reflected to some extent by the level of Roosevelt Lake, which now lacks 62 feet of being full and the demand for irrigation water for the Salt River valley is lowering it about one-sixth of an inch a day. This condition is not considered alarming, however, since the water is still 163 feet deep at the dam.

Better Forestry on Timber Rights Lands: The Secretary of Agriculture on October 9 executed an agreement with the Arizona Lumber and Timber Company, pursuant to a recent act of Congress, under which agreement the Arizona Lumber and Timber Company, in return for an extension of timber rights until 1950 on six sections, allows the Forest Service to retain a much larger number of seed trees on all or portions of fifteen sections than was possible under the existing agreement. The agreement provides for a lump sum volume of seed trees for all these sections, which can not be exceeded, and permits of distribution between sections, in accordance with silvicultural needs subject to a limitation of fifteen per cent of the total volume on any one section, and as to one section, a limit of three seed trees per acre without restrictions as to size. The company also agrees to dispose of brush and construct fire lines on these sections in accordance with the prevailing practice of current sales on the Coconino Forest. The consummation of this agreement is of great advantage to the United States and it provides for decidedly better forestry on a considerable area of timber rights land than has been possible heretofore.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Publicity Pays: In commenting on the increase in receipts of over 100 per cent for the calendar year of 1922 over 1921, the total for 1922 being about $110,000, the Utah State Game Commissioner states:

> "It may be said that the increase is due to the fact that a campaign of education has been conducted throughout the State which has resulted in the organization of more than thirty associations for the protection of fish and game, with a total membership of upwards of 10,000. Through these associations a feeling of cooperation has been effected and considerable support has been received from this source."

It will be of interest to Forest officers to know that at least two-thirds of these associations have been organized by the efforts of Forest officers. In some cases it is going to take considerable effort to keep the organizations alive until their benefits are generally appreciated.--S.B.L.

Another Reason for Clearing Up Your Sale Areas: While burning brush on Tripod Meadows (Payette N. F.) Ranger Arthur Potter found a five gallon copper kettle and fifteen feet of copper pipe stored under a pile of brush. Under another pile close by a stove was found. The owner had evidently drunk all the moonshine, as none was found.

Poison Milkweed Eradication: Forest Ranger E. V. Storm reports the first attempt at poison milkweed eradication in District 4, on the Dixie Forest. A patch of this weed has existed for some years on a small area of about three acres which was once ploughed up for cultivation and then abandoned. The milkweed took possession of the area at that time and has been doing a great deal of damage. In 1921 there were 13 deaths charged up against this patch. Eradication was carried out on an experimental basis, some of the weed being pulled up by hand, as the soil was loose and moist. Other in brush was burned, and some of it was ploughed under. It is, of course, too early to judge results. The whole job cost $55.00.

DISTRICT 5 - CALIFORNIA DISTRICT

Foresters Dedicate: In the ruddy glow of a roaring bonfire, on the evening of November 24, sixty-five forestry students and alumni of the University of California joined in an impressive dedication of the noted eucalyptus grove on the campus. Massive seats cut from whole redwood logs, presented by C. R. Johnson of the Union Lumber Company, San Francisco, formed a magic circle around the dancing flames. On the back rest of one of those seats a bronze plaque was placed by the Forestry Club, dedicating the grove to public use and the furtherance of the cause of forestry. The speech of presentation was made by Mark Edmunds, President of the Forestry Club, followed by appropriate addresses on the objectives and life work of a forester by M. C. Warren, California Barrel Company, Arcata, Calif., Charles L. Trabert, Coos Bay Lumber Company, and W. I. Hutchinson of the Forest Service. The grove dedicated by the foresters is composed of towering eucalypti (blue gum) 40 years old and 165 feet in height. Prior to the evening meeting Professor Mulford, Director of the Forest School at the University, gave a dinner to the old graduates of the school. At this dinner a new society to be called The California Foresters - composed of alumni of the University of California now engaged in forestry or allied industries - was organized, with M. C. Warren as president and Willis Wagener of the Office of Pathology, Bureau of Plant Industry, as secretary-treasurer.

A Useful Thing to Take Along: Forest officers are too much inclined to neglect cuts and bruises received during the day's work. There have been instances where such neglect has resulted in serious consequences. A few carry antiseptics or some form of first aid medicine, but the majority do not. An excellent preparation for use in the field is one known as "Oil of Salt," as it stops bleeding and has healing and soothing qualities, as well as acting as an antiseptic. It can be purchased at Coffin Redington Co., 49 Second Street, San Francisco. The price is 35 cents for a bottle containing one or two ounces.--Pitchlynn.

DISTRICT 6 - NORTH PACIFIC DISTRICT

State Forestry Progress: The second formal meeting of the Washington State Forestry Conference was held on October 11 and 12 at Seattle. The meeting was for the purpose of hearing the reports of the various committees appointed a year ago. The main objects of the conferences are the formulation of a definite forestry policy for the State of Washington, and is due to the initiative and foresight of Dean Winkenwerder of the Forest School, University of Washington.

Forest "Registers": Ranger Mark Brunn of the Rainier has secured the publication in the Yakima and Naches papers of the names of a number of visitors to his district, the names having been written on Forest Service signs. Mr. Brunn also wrote a letter to the parties calling attention to the regulation prohibiting such action.

Inspired: Scribners for August contains a series of line drawings by the Oregon poet and artist, Anthony Euwer, called "In an Oregon Wilderness." The drawings for the "Ghost Trees," the airplane, the stand of Douglas fir, and a forest fire, were made from photographs furnished Mr. Euwer by Public Relations.

A PENCIL POINT

By the Philosophic Observer.

With a solemn note of warning Major Kelley asks us why
We use twenty-seven pencils and never bat an eye.

And he says that we had better save the money we thus squander
To be used in fighting fire, - 'tis a thought we all shall ponder.

But pray be gentle, Mister Kelley, do not think we all are wasters
For we chew those pencils, - yes sir chew them in our little tasters.

As we burn the midnight candle doing everything we can
To comply with your requirements for a Standard Working Plan;

And we chew them as we ponder o'er the Fire Statistic mess
For the "A-to-Izzard" Spread Sheets which we view with great distress,

If you'd save your pencil money to buy us tools - protective,
Why not cut down our paper work as a pencil point objective?

In your Administrative Manual why not give us Standard Rations?
Say six pencils for each field man, - put this in your Regulations.

(N.B.--Written with a personally owned Eversharp.)

COOPERATION

Can any Western Forest beat this instance of voluntary cooperation, I quote?

"On the Routt Forest in District 2 a cow man was driving a bunch of beef to market. He saw a smoke in the Forest, turned the cattle into the first field he came to, returned home, got the flivver and started with another man for the fire. Before he arrived he was advised that a sawmill was afire, that the surrounding timber was not menaced and there were plenty of men on the job to do everything necessary. He returned, picked up his cattle and went on."

This brand of cooperation lends color to the belief that in time under proper influence, country-wide, the cattleman who has his stock to gather and the farmer who has his hay to put up will ante when the cry of fire is spread.

Such cooperation isn't unearned increment. It is the result of years of hard work fathered by the point of view that it can be done and by gum we will do it. It was done.--E.W.K.

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